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**THE JOURNAL**  
OF  
**MENTAL SCIENCE.**

**EDITORS :**

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**J. R. Lord, M.B.**

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**Thomas Drapes, M.B.**

**VOL. LX.**



**LONDON :**

**J. & A. CHURCHILL,**

**7, GREAT MARLBOROUGH STREET.**

**MDCCCXIV.**

" In adopting our title of the *Journal of Mental Science*, published by authority of the *Medico-Psychological Association*, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the term mental physiology or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid; for although we do not eschew metaphysical discussion, the aim of this JOURNAL is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our JOURNAL is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanician uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow-men may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—*Sir J. C. Bucknill, M.D., F.R.S.*



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 1898. A. R. Urquhart, M.D., James Murray's Royal Asylum, Perth.  
 1899. J. B. Spence, M.D., Burntwood Asylum, nr. Lichfield, Staffordshire.  
 1900. Fletcher Beach, M.B., 79, Wimpole Street, W.  
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 1902. J. Wiglesworth, M.D., F.R.C.P., Rainhill Asylum, near Liverpool.  
 1903. Ernest W. White, M.B., M.R.C.P., City of London Asylum, Dartford, Kent.  
 1904. R. Percy Smith, M.D., F.R.C.P., 36, Queen Anne Street, Cavendish Square, London, W.  
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 1908. Chas. A. Mercier, M.D., F.R.C.P., F.R.C.S., 34, Wimpole Street, London, W.  
 1909. W. Bevan-Lewis, M.Sc., L.R.C.P., Medical Director, West Riding Asylum, Wakefield.  
 1910. John Macpherson, M.D., F.R.C.P. Edin., Commissioner in Lunacy, 8, Darnaway Street, Edinburgh.  
 1911. Wm. R. Dawson, B.A., M.D., F.R.C.P.I., D.P.H., Inspector of Lunatic Asylums, Dublin Castle, Dublin.  
 1912. J. Grieg Soutar, M.B., Medical Superintendent, Barnwood House, Gloucester.  
 1913. James Chambers, M.A., M.D.R.U.I., The Priory, Roehampton, S.W.

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 1881. Benedikt, Prof. M., Franciskaner Platz 5, Vienna.  
 1907. Bianchi, Prof. Leonardo, Manicomio Provinciale di Napoli. (*Corr. Mem.*, 1896.)  
 1900. Blumer, G. Alder, M.D., L.R.C.P. Edin., Butler Hospital, Providence, U.S.A. (*Ord. Mem.*, 1890.)  
 1900. Bresler, Johannes, M.D., Oberarzt, Lüben in Schlesien, Germany. (*Corr. Mem.* 1896.)  
 1881. Brosius, Dr.,  
 1876. Browne, Sir J. Crichton, M.D. Edin., LL.D., D.Sc., F.R.S., Lord Chancellor's Visitor, Royal Courts of Justice, Strand, W.C., and 45, Hans Place, S.W. (PRESIDENT, 1878.)  
 1902. Brush, Edward N., M.D., Sheppard and Enoch Pratt Hospital, Towson, Maryland, U.S.A.  
 1887. Chapin, John B., M.D., Canandaigua, N.Y., U.S.A.  
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 1912. Considine, Thomas Ivory, F.R.C.S.I., L.R.C.P.I., Inspector of Lunatic Asylums, Ireland, Office of Lunatic Asylums, Dublin Castle, Dublin.  
 1902. Coupland, Sidney, M.D., F.R.C.P. Lond., Commissioner in Lunacy, 16, Queen Anne Street, Cavendish Square, London, W.  
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 1898. Hine, George T., F.R.I.B.A., 35, Parliament Street, London, S.W.  
 1881. Hughes, C. H., M.D., St. Louis, Missouri, United States.  
 1909. Kraepelin, Dr. Emil, Professor of Psychiatry, The University, Munich.  
 1887. Lentz, Dr., Asile d'Aliénés, Tournai, Belgique.  
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 1911. Moeli, Prof. Dr. Karl, Director, Herzberge Asylum, Berlin.  
 1897. Morel, M. Jules, M.D., 56, Boulevard Leopold, Ghent, Belgium.  
 1889. Needham, Frederick, M.D.St. And., M.R.C.P.Edin., M.R.C.S.Eng., Commissioner in Lunacy, 19, Campden Hill Square, Kensington, W. (PRESIDENT, 1887.)  
 1909. Obersteiner, Dr. Heinrich, Professor of Neurology, The University, Vienna.  
 1881. Peeters, M., M.D., Gheel, Belgium.  
 1900. Ritti, Ant., 68, Boulevard Exelmans, Paris. (*Corr. Mem.*, 1890.)  
 1887. Schüle, Heinrich, M.D., Illenau, Baden, Germany.  
 1911. Semelaigne, René, M.D.Paris, Secrétaire des Séances de la Société Médico-Psychologique de Paris, 16, Avenue de Madrid, Neuilly, Seine, France. (*Corresponding Member from 1893.*)  
 1881. Tamburini, A., M.D., Reggio-Emilia, Italy.  
 1901. Toulouse, Dr. Edouard, Directeur du Laboratoire de Psychologie expérimental à l'Ecole des Hautes Etudes Paris et Médecin en chef de l'Asile de Villejuif, Seine, France.  
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 1880. Kornfeld, Dr. Hermann, Fr. Schlesien, Han'ptpostluyerstr., Breslau.  
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 1895. Lindell, Emil Wilhelm, M.D., Sweden.  
 1901. Manheimer-Gommès, Dr., 32, Rue de l'Arcade, Paris.  
 1909. Moreira, Dr. Julien, M.D.Bahia, Professor and Director of the National Manicomium of Rio de Janeiro (*Editor of the Brazilian Archives of Psychiatry, etc.*).  
 1886. Parant, M. Victor, M.D., Toulouse.  
 1909. Pilcz, Dr. Alexander (Professor of Psychiatry in the University of Vienna), Superintendent Landessanatorium für Nerven und Geistes- kranke Steinhof, Vienna.  
 1890. Régis, Dr. E., 54, Rue Huguerie, Bordeaux.



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*Alphabetical List of Members of the Association, with the year in which they joined. The Asterisk means Members who joined between 1841 and 1855.*

- 1900. Abbott, Henry Kingsmill, B.A., M.D.Dub., D.P.H.Irel., Medical Superintendent, Hants County Asylum, Fareham.
- 1891. Adair, Thomas Stewart, M.D., C.M.Edin., F.R.M.S., Medical Superintendent, Storthes Hall Asylum, Kirkburton, near Huddersfield. (*Hon. Sec. N. and M. Division since 1908.*)
- 1910. Adam, George Henry, M.R.C.S., L.R.C.P.Lond., Manager and Medical Superintendent, West Malling Place, Kent.
- 1913. Adams, John Barfield, L.R.C.P.&S.Edin., 119, Redland Road, Bristol.
- 1868. Adams, Josiah O., M.D.Durh., F.R.C.S.Eng., J.P., 117, Cazenove Road, Stamford Hill, N.
- 1886. Agar, S. Hollingsworth, jun., B.A.Cantab., M.R.C.S.Eng., L.S.A., Hurst House, Henley-in-Arden.
- 1869. Aldridge, Chas., M.D., C.M.Aber., L.R.C.P.Lond., Bellevue House, Plympton, Devon.
- 1905. Alexander, Edward Henry, M.B., C.M.Edin., M.R.C.S., L.R.C.P.Lond., M.P.C., Physician Superintendent, Ashbourne Hall Asylum, Dunedin, New Zealand.
- 1899. Alexander, Hugh de Maine, M.D., C.M.Edin., Medical Superintendent, Aberdeen City District Asylum, Kingseat, Newmachar, Aberdeen.
- 1890. Alexander, Robert Reid, M.D., C.M.Aber., 38, Glenloch Road, Haverstock Hill, N.W.
- 1899. Allmann, Dorah Elizabeth, M.B., B.Ch.R.U.I., Assistant Medical Officer, District Asylum, Armagh.
- 1898. Anderson, John Sewell, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Hull City Asylum, Willerby, near Hull.
- 1912. Annandale, James Scott, M.B., Ch.B.Edin., Second Assistant Physician, Aberdeen Royal Asylum.
- 1912. Apthorp, Frederick William, M.R.C.S.Eng., L.R.C.P.Edin., M.P.C., Senior Medical Officer, St. George's Retreat, Ravensworth, Burgess Hill.
- 1904. Archdale, Mervyn Alex., M.B., B.S.Durh., Medical Superintendent, East Riding Asylum, Beverley, Yorks.
- 1905. Archdall, Mervyn Thomas, L.R.C.P.&S.Edin., L.S.A.Lond., Brynn-y-Nenadd Hall, Llanfairfechan, N. Wales.
- 1910. Auden, G. A., M.A., M.D., B.C., D.P.H.Cantab., M.R.C.P.Lond., F.S.A., Medical Superintendent, Educational Offices, Edmund Street, Birmingham.
- 1891. Aveline, Henry T. S., M.D.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, County Asylum, Cotford, near Taunton, Somerset. (*Hon. Sec. for S.W. Division, 1905-11.*)
  
- 1911. Babington, Alice E. May, M.B., Ch.B.Edin., West Riding Asylum, Wakefield.
- 1903. Bailey, William Henry, M.D.Lond., M.R.C.S.Eng., L.S.A., D.P.H., Featherstone Hall, Southall, Midd.
- 1894. Baily, Percy J., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Hanwell, W.
- 1909. Bain, John, M.A., M.B., B.Ch.Glasg., Assistant Medical Officer, Northampton County Asylum, Berrywood.
- 1913. Bainbridge, Charles Frederick, M.B., Ch.B.Edin., Assistant Medical Officer, Devon County Asylum, Exminster.
- 1906. Baird, Harvey, M.D., Ch.B.Edin., Periteau, Winchelsea, Sussex.
- 1878. Baker, H. Morton, M.B., C.M.Edin., 7, Belsize Square, London, N.W.
- 1888. Baker, John, M.D., C.M.Aberd., Medical Superintendent, State Asylum, Broadmoor, Berks.
- 1909. Ballard, Ernest Fryer, M.B., B.S.Lond., 11, Lyndhurst Road, Hove, Sussex.

1904. Barham, Guy Foster, M.A., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, London County Asylum, Long-Grove, Epsom.
1913. Barkley, James Morgan, M.B., Ch.B.Edin., Senior Medical Officer, Brace Bridge Asylum, Lincolnshire.
1910. Bartlett, George Norton, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Horton, Epsom.
1904. Barton, Samuel J., M.D., M.Ch.Dubl., Physician to the Norfolk and Norwich Hospital, Surrey Street, Norwich.
1901. Baskin, J. Longhead, M.D.Bru., L.R.C.P.&S.Edin., L.R.F.P.S.Glas., Llangarran, Salisbury.
1902. Baugh, Leonard D. H., M.B., Ch.B.Edin., Epileptic Colony, Stongyetts, Chryston, N.B.
1893. Bayley, Joseph Herbert, M.B., C.M.Edin., L.R.C.P.Lond. (address not known).
1907. Bazalgette, Sidney, M.R.C.S., L.R.C.P.Lond., M.P.C., Assistant Medical Officer, Fishponds Asylum, Bristol.
1874. Beach, Fletcher, M.B., F.R.C.P.Lond., formerly Medical Superintendent, Darent Asylum, Dartford; Stresa, Downs Road, Coulsdon, Surrey. (*Secretary Parliamentary Committee*, 1896-1906. *General Secretary*, 1889-1896. *PRESIDENT*, 1900.)
1892. Beadles, Cecil F., M.R.C.S., L.R.C.P.Lond., The Clergy House, Englefield Green, Surrey.
1902. Beale-Browne, Thomas Richard, M.R.C.S.Eng., L.R.C.P.Lond., Medical Staff, South Nigeria, West Africa.
1913. Bedford, Percy William Page, M.B., Ch.B.Edin., House Physician, Salop Infirmary, Shrewsbury.
1909. Beeley, Arthur, M.Sc.Leeds, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H.Camb. (*Assistant Medical Officer*, *E. Sussex Educational Committee*), 14, Park Avenue, Keighly, Yorks.
1912. Benson, Henry Porter D'Arcy, M.D., C.M.Edin., M.R.C.P., F.R.C.S. Edin., Medical Superintendent, Farnham House, Finglas, Dublin.
1899. Beresford, Edwyn H., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Tooting Bec Asylum, Tooting, S.W.
1912. Berncastle, Herbert M., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Croydon Mental Hospital, Warlingham, Surrey.
1879. Bevan-Lewis, William, M.Sc.Leeds, M.R.C.S., L.R.C.P.Lond., Elsinore, Dyke Road Avenue, Brighton. (*PRESIDENT*, 1909-10.)
1894. Blachford, James Vincent, M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., City Asylum, Fishponds, Bristol.
1913. Black, Robert Sinclair, M.A.Edin., M.D., C.M.Aberd., D.P.H., M.P.C., Senior Assistant Medical Officer, Valkenburg Asylum, Cape Town, South Africa.
1908. Blackmore, Humphrey, P., M.D.St. And., M.R.C.S.Eng., L.S.A., Salisbury.
1898. Blair, David, M.A., M.D., C.M.Glasg., County Asylum, Lancaster.
1897. Blandford, Joseph John Guthrie, B.A., D.P.H.Camb., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Whalley Asylum, Lancs.
1908. Blandy, Gurth Swinnerton, M.D., Ch.B.Edin., Assistant Medical Officer, Middlesex County Asylum, Napsbury, Herts.
1904. Bodvel-Roberts, Hugh Frank, M.A.Cantab., M.R.C.S., L.R.C.P.Lond., L.S.A., Middlesex County Asylum, Napsbury, near St. Albans, Herts.
1900. Bolton, Joseph Shaw, M.D., B.S., D.Sc., F.R.C.P.Lond., Medical Superintendent, West Riding Asylum, Wakefield.
1892. Bond, Charles Hubert, D.Sc., M.D., C.M.Edin., M.R.C.P.Lond., M.P.C., Commissioner in Lunacy, 66, Victoria Street, S.W. (*Hon. General Secretary*, 1906-12.)
1912. Borrie, David Forbes, M.R.C.S.Eng., L.R.C.P.Lond., Bassorah.
1877. Bower, David, M.D., C.M.Aber., Springfield House, Bedford. (*Chairman*, *Parliamentary Committee*, 1907-1910.)
1877. Bowes, John Ireland, M.R.C.S.Eng., L.S.A., Devizes, Wilts.

1893. Bowes, William Henry, M.D., B.S.Lond., F.R.C.S.Eng., Medical Superintendent, Plymouth Borough Asylum, Ivybridge, Devon.
1900. Bowles, Alfred, M.R.C.S., L.R.C.P.Lond., 10, South Cliff, Eastbourne.
1896. Boycott, Arthur N., M.D.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Herts County Asylum, Hill End, St. Albans, Herts. (*Hon. Sec. for S.-E. Division, 1900-05.*)
1912. Boyd, William, M.B., Ch.B.Belf., c/o Allen Line, Surg. R.M.S. "Carthaginian."
1898. Boyle, A. Helen A., M.D.Bru., L.R.C.P.&S.Edin., 9, The Drive, Hove, Brighton.
1883. Boys, A. H., L.R.C.P.Edin., M.R.C.S.Eng., L.S.A., The White House, St. Albans.
1891. Braine-Hartnell, George M. P., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County and City Asylum, Powick, Worcester.
1911. Brander, John, M.B., C.B.Edin., Assistant Medical Officer, London County Asylum, Bexley, S.E.
1895. Briscoe, John Frederick, M.R.C.S., Eng., F.R.G.S., Resident Medical Superintendent, Westbrooke House Asylum, Alton, Hants.
1905. Brown, Harry Egerton, M.D., Ch.B.Glasg., M.P.C., West Koffies Asylum, Pretoria, S. Africa.
1908. Brown, Robert Cunyngham, M.D., B.S.Durh., General Board of Lunacy, 15, Rutland Square, Edinburgh.
1908. Brown, R. Dods, M.D., Ch.B., F.R.C.P.Edin., Dipl. Psych., D.P.H., Physician Superintendent, James Murray's Royal Asylum, Perth.
1903. Brown, Ralph, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Bethlem Royal Hospital, S.E.
1912. Brown, William, M.D., C.M.Glas., District Medical Officer, Adviser in Lunacy to Bristol Magistrates, Park View, Fishponds, Bristol.
1893. Bruce, Lewis C., M.D., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Druid Park, Murthly, N.B. (*Co-Editor of Journal since 1911; Hon. Sec. for Scottish Division, 1901-1907.*)
1913. Brunton, George Llewellyn, M.B., Ch.B.Edin., North Riding Asylum, Clifton, York.
1912. Buchanan, Henry Meredith, M.B., Ch.B.Edin., Mental Hospital, Seacliff, Otago, N.Z.
1912. Buchanan, William Murdoch, M.B., Ch.B.Glas., Linden Bank, Lenzie, Glasgow.
1892. Bullen, Frederick St. John, M.R.C.S.Eng., L.S.A., 3, Richmond Park Road, Clifton, Bristol.
1908. Bullmore, Charles Cecil, J.P., L.R.C.P.&S.Edin., L.R.F.P.S.Glas., Medical Superintendent, Flower House, Catford.
1912. Burke, Joseph D. G., M.B., Ch.B.R.U.I., Assistant Medical Officer, District Asylum, Melton, Suffolk.
1911. Buss, Howard Decimus, B.A., B.Sc.France, M.D.Bru.&Cape, M.R.C.S., L.R.C.P., L.M.S.S.A.Lond., Assistant Medical Officer, Fort Beaufort Asylum, Cape Colony.
1910. Cahir, John P., M.B., B.Ch.R.U.I., Assistant Medical Officer, Borough Asylum, Humberstone, Leicester.
1891. Caldecott, Charles, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Earlswood Asylum, Redhill, Surrey.
1889. Callcott, James T., M.D., B.S.Durh., M.R.C.S.Eng., Medical Superintendent, Borough Asylum, Newcastle-on-Tyne.
1913. Cameron, John Allan Munro, M.B., Ch.B.Glas., Pathologist and Assistant Physician, Lancaster County Asylum, Whittingham, Preston.
1894. Campbell, Alfred Walter, M.D., C.M.Edin., Macquarie Chambers, 183, Macquarie Street, Sydney, New South Wales.
1909. Campbell, Donald Graham, M.B., C.M.Edin., "Auchmillam," 12, Reidhaven Street, Elgin.



1880. Campbell, Patrick E., M.B., C.M.Edin., Medical Superintendent, Metropolitan Asylum, Caterham, Surrey.
1897. Campbell, Robert Brown, M.D., C.M., F.R.C.P.E., Medical Superintendent, Stirling District Asylum, Larbert. (*Secretary for Scottish Division from 1910.*)
1914. Carlsson, Carl Petter, M.B., Ch.B.Edin., Stirling District Asylum, Larbert, N.B.
1905. Carre, Henry, L.R.C.P.&S.Irel., Woodilee Asylum, Lenzie, Glasgow.
1891. Carswell, John, L.R.C.P.Edin., L.R.F.P.S.Glasg., J.P., Certifying Medical Officer, Barony Parish, 5, Royal Crescent, Glasgow.
1874. Cassidy, D. M., M.D., C.M.McGill Coll., Montreal, D.Sc. (Public Health) Edin., F.R.C.S.Edin., Medical Superintendent, County Asylum, Lancaster.
1888. Chambers, James, M.A., M.D.R.U.I., M.P.C., The Priory, Roehampton. (*Co-Editor of Journal since 1905, Assistant Editor 1900-05.*) (PRESIDENT, 1913-14.)
1911. Chambers, Walter Duncan, M.A., M.D., Ch.B.Edin., M.P.C., Crichton Royal Institution, Dumfries, N.B.
1865. Chapman, Thomas Algernon, M.D.Glas., L.R.C.S.Edin., F.Z.S., Betula, Reigate.
1907. Chislett, Charles G. A., M.B., Ch.B.Glasg., Assistant Medical Officer, Woodilee Asylum, Lenzie, Glasgow.
1880. Christie, J. W. Stirling, L.R.C.P.&S.Edin., Medical Superintendent, County Asylum, Stafford.
1878. Clapham, Wm. Crochley S., M.D., F.R.C.P.Ed., M.R.C.S., F.S.S., The Five Gables, Mayfield, Sussex. (*Hon. Sec. N. and M. Division, 1897-1901.*)
1907. Clarke, Geoffrey, M.D.Lond., Senior Assistant Medical Officer, London County Asylum, Banstead, Sutton, Surrey.
1910. Clarke, James Kilian P., M.B., B.Ch.R.U.I., D.P.H., Essex and Colchester Asylum, Brentwood.
1907. Clarkson, Robert Durward, B.Sc., M.D., C.M.Edin., F.R.C.P.Edin. (Medical Officer, Scottish National Institute for the Education of Imbecile Children), The Park, Larbert, Stirling.
1901. Cleland, William Lennox, M.B., C.M.Edin., Park Side, Adelaide, South Australia.
1862. Clouston, Sir Thomas S., M.D., LL.D.Edin., F.R.C.P., F.R.S.E., 26, Heriot Row, Edinburgh. (*Editor of Journal, 1873-1881.*) (PRESIDENT, 1888.)
1892. Cole, Robert Henry, M.D.Lond., M.R.C.P.Lond., 25, Upper Berkeley Street, W. (*Secretary of Parliamentary Committee since 1912.*)
1900. Cole, Sydney John, M.A., M.D., B.Ch.Oxon., Medical Superintendent, Wilts County Asylum, Devizes.
1906. Collen, Edward Victor, B.A., M.D., B.Ch.Dubl., Killycomain House, Portadown, Ireland.
1906. Collier, Walter Edgar, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Kent County Asylum, Maidstone.
1903. Collins, Michael Abdy, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Ewell Colony, Epsom, Surrey. (*Hon. General Secretary since 1912.*)
1910. Conlon, Thomas Peter, L.R.C.P.&S.Irel., Resident Medical Superintendent, District Asylum, Monaghan.
1878. Cooke, Edward Marriott, M.D.Lond., M.R.C.S.Eng., Commissioner in Lunacy, 69, Onslow Square, S.W.
1909. Cooke, John Benson, L.R.C.S.&P.Edin. (*H.M. Prison Service*), Medical Officer's House, H.M. Prison, Wakefield.
1910. Coombes, Percival Charles, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Surrey County Asylum, Brookwood, Woking.
1905. Cooper, K. D., L.R.C.P.&S.Edin., L.F.P.S.Glas., c/o Leopold & Co., Apollo, Bunder, Bombay.
1903. Cormac, Harry Dove, M.B., B.S.Madras, Parkside Asylum, Macclesfield.

1891. Corner, Harry, M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., 37, Harley Street, W.
1905. Cotter, James, L.R.C.P.&S.E., L.R.F.P.S.Glas., Down District Asylum, Downpatrick.
1897. Cotton, William, M.A., M.D.Edin., D.P.H.Cantab., M.P.C., 231, Gloucester Road, Bishopston, Bristol.
1910. Coupland, William Henry, L.R.C.S.&P.Edin., Senior Assistant Medical Officer, 1, Sea View, South Road, Lancaster.
1913. Court, E. Percy, M.R.C.S., L.R.C.P.Lond., Severalls Asylum, Colchester.
1893. Cowen, Thomas Philip, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County Asylum, Rainhill, Lancashire.
1911. Cox, Donald Maxwell, M.R.C.S., L.R.C.P.Lond., 2, Royal Park, Clifton, Bristol.
1884. Cox, L. F., M.R.C.S.Eng., Plas Caermeddyg, Llanbedr, R.S.O., Merioneth.
1893. Craig, Maurice, M.A., M.D., B.C.Cantab., F.R.C.P.Lond., M.P.C., 54, Welbeck Street, W. (*Hon. Secretary of Educational Committee, 1905-8; Chairman of Educational Committee since 1912.*)
1897. Cribb, Harry Gifford, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Winterton Asylum, Ferryhill, Durham.
1911. Crichlow, Charles Adolphus, M.B., Ch.B.Glas., District Asylum, Melrose, N.B.
1904. Cross, Harold Robert, L.S.A., F.R.G.S., Storches Hall Asylum, Kirkburton, near Huddersfield.
1909. Crowther, Sydney Nelson, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Netherne County Asylum, Surrey.
1914. Cruickshank, J., M.D., Ch.B.Glas., Pathologist, Crichton Royal Hospital, Dumfries.
1907. Daniel, Alfred Wilson, B.A., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, London County Asylum, Hanwell, W.
1896. Davidson, Andrew, M.D., C.M.Aber., M.P.C., Wyoming, Macquarie Street, Sydney, N.S.W.
1911. Davie, James, M.B., Ch.B.Edin., 84, Braid Road, Edinburgh.
1891. Davis, Arthur N., L.R.C.P.&S.Edin., Medical Superintendent, County Asylum, Exminster, Devon.
1894. Dawson, William R., B.A., M.D., B.Ch.Dubl., F.R.C.P.I., D.P.H., Inspector of Lunatics in Ireland, Claremont, Burlington Road, Dublin. (*Hon. Sec. to Irish Division, 1902-11; PRESIDENT, 1911-12.*)
1883. De Lisle, Samuel Ernest, L.R.C.P.&S.I., Freaghmore, Lower Bourne, Farnham, Surrey.
1901. De Steiger, Addle, M.D.Lond., County Asylum, Brentwood, Essex.
1905. Devine, Henry, M.D., B.S., M.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Senior Assistant Medical Officer, West Riding Asylum, Wakefield.
1904. Devon, James, L.R.C.P. & S.Edin., 6, Cathedral Square, Glasgow.
1903. Dickson, Thomas Graeme, L.R.C.P. & S.Edin., Medical Superintendent, Wye House, Buxton.
1909. Dillon, Kathleen, L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Mullingar.
1905. Dixon, J. Francis, M.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, Borough Asylum, Leicester.
1879. Dodds, William J., M.D., C.M., D.Sc.Edin., Valkenburg, Mowbray, near Cape Town, South Africa.
1911. Donald, John Quin, L.R.C.P.&S.Edin., Medical Superintendent, Ballyanahrim Sanatorium, Port Stewart, Co. Derry.
1903. Donald, Robert, M.D., Ch.B.Glas., Ashton, Plains, Airdrie, N.B.
1889. Donaldson, William Ireland, B.A., M.D., B.Ch.Univ. of Dubl., Medical Superintendent, County of London Manor Asylum, Epsom, Surrey.
1892. Donelan, John O'Connor, L.R.C.P.&S.I., M.P.C., St. Dymphna's, North Circular Road, Dublin.
1899. Donelan, Thomas O'Connor, L.R.C.P. & S.I., Middlesex County Asylum, Napsbury, near St. Albans, Herts.
1902. Douglas, Archibald R., L.R.C.P.&S.Edin., L.R.F.P.S.Glas., M.P.C., Royal Albert Asylum, Lancaster.

1911. Douglas, Reginald Inglis, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., D.P.H., Jameston Manse, Strathpeffer.
1890. Douglas, William, M.D.R.U.I., M.R.C.S.Eng., F.R.G.S., Brandfold, Goudhurst, Kent.
1905. Dove, Augustus Charles, M.D., B.S.Durh., M.R.C.S.Eng., "Brightside," Crouch End Hill, N.
1897. Dove, Emily Louisa, M.B.Lond., 1, Vincent Square, Westminster, S.W.; University Club for Ladies, 4, George Street, Hanover Square, W.
1903. Dow, William Alex., M.D., B.S.Durh., M.R.C.S., L.R.C.P., D.P.H., H.M. Prison, Lewes.
1910. Downey, Michael Henry, M.B., Ch.B.Melb., L.R.C.P.&S.Edin., L.R.F.P.S. Glasg., Assistant Medical Officer, Parkside Asylum, Adelaide, South Australia.
1884. Drapes, Thomas, M.B.Dubl., L.R.C.S.I., Medical Superintendent, District Asylum, Enniscorthy, Ireland. (PRESIDENT-ELECT, 1910-11; *Co-Editor of Journal since 1912.*)
1907. Dryden, A. Mitchell, M.B., Ch.B.Edin., Burailly House, Lockerbie Road, Dumfries.
1902. Dudgeon, Herbert Wm., M.D.Durh., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer to the Egyptian Asylum, Khanka Asylum, Egypt.
1899. Dudley, Francis, L.R.C.P.&S.I., Senior Assistant Medical Officer, County Asylum, Bodmin, Cornwall.
1913. Dyer, Sidney Reginald, M.D.Bru., L.R.C.P.Lond., M.R.C.S.Eng., L.S.A., D.P.H., Barrister-at-Law, Principal Medical Officer, H.M. Prison, Brixton; 151, Brixton Hill, S.W.
1911. Dykes, Percy Armstrong, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Fulbourne Asylum, Cambridge.
1899. Eades, Albert I., L.R.C.P. & S.I., Medical Superintendent, North Riding Asylum, Clifton, Yorks.
1903. Eady, George John, M.D.Bru., M.B.Lond., M.R.C.P.Edin., M.R.C.S.Eng., 6, Roland Houses, S. Kensington, S.W.
1874. Eager, Reginald, M.D.Lond., M.R.C.S.Eng., L.S.A. (address not communicated).
1906. Eager, Richard, M.D., Ch.B.Aber., M.P.C., Assistant Medical Officer, Devon County Asylum, Exminster.
1873. Eager, Wilson, L.R.C.P.Lond., M.R.C.S.Eng., L.S.A., St. Aubyn's, Woodbridge, Suffolk.
1881. Earle, Leslie M., M.D., C.M.Edin., 108, Gloucester Terrace, Hyde Park, W.
1891. Earls, James Henry, M.D., M.Ch.R.U.I., D.P.H., L.S.A., M.P.C., Barrister-at-Law, Feustanton, Christchurch Road, Streatham Hill, S.W.
1903. East, Guy Rowland, M.D., B.S.Durh., D.P.H., Northumberland County Asylum, Morpeth.
1907. East, Wm. Norwood, M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., H.M. Prison, Manchester; also 171, Cheetham Hill Road, Manchester.
1895. Easterbrook, Charles C., M.A., M.D., F.R.C.P.Ed., M.P.C., J.P., Physician Superintendent, Crichton Royal Institution, Dumfries.
1914. Eder, M.D., B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer, Deptford School Clinic, 7, Welbeck Street, W.
1895. Edgerley, Samuel, M.A., M.D., C.M.Edin., M.P.C., Medical Superintendent, West Riding Asylum, Menston, nr. Leeds.
1897. Edwards, Francis Henry, M.D.Bru., M.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent, Camberwell House, S.E.
1901. Elgee, Samuel Charles, L.R.C.P.&S.I., Senior Assistant Medical Officer, London County Asylum, Colney Hatch, N.
1889. Elkins, Frank Ashby, M.D., C.M.Edin., M.P.C., Medical Superintendent, Metropolitan Asylum, Leavesden, Herts.
1898. Ellerton, Henry B., M.R.C.S., L.R.C.P.Lond., Inspector of the Insane, Hospital for the Insane, Goodna, Brisbane, Queensland, Australia.
1912. Ellerton, John Frederick Heise, M.D.Bru., M.R.C.S.Eng., L.R.C.P. Edin., Rotherwood, Leamington Spa.

1908. Ellis, Edward, M.D.Durh., L.R.C.S.& P.Edin., Craven House, Hopwood Lane, Halifax, Yorks.
1890. Ellis, William Gilmore, M.D.Bruce, M.R.C.S.Eng., L.S.A., J.P., Principal Civil Medical Officer, Singapore, Straits Settlements.
1908. Ellison, Arthur, M.R.C.S., L.R.C.P.Eng., Deputy Medical Officer, H.M. Prison, Leeds, 120, Domestic Street, Holbeck, Leeds.
1899. Ellison, F. C., B.A., M.D., B.Ch., T.C.D., Resident Medical Superintendent, District Asylum, Castlebar.
1911. Emslie, Isabella Galloway, M.D., Ch.B.Edin., West House, Royal Asylum, Morningside, Edinburgh.
1911. English, Ada, M.B., B.Ch.R.U.I., Assistant Medical Officer, District Asylum, Ballinasloe.
1901. Erskine, Wm. J. A., M.D., C.M.Edin., Senior Assistant Medical Officer, City Asylum, Nottingham.
1895. Eurich, Frederick Wilhelm, M.D., C.M.Edin., 8, Mornington Villas, Maningham Lane, Bradford.
1894. Eustace, Henry Marcus, B.A., M.D., B.Ch.Dubl., M.P.C., Assistant Physician, Hampstead and Highfield Private Asylum, Glasnevin, Dublin.
1909. Eustace, William Neilson, L.R.C.S.&P.Irel., Lisronagh, Glasnevin, co. Dublin.
1909. Evans, George, M.B.Lond., Senior Assistant Medical Officer, Severalls Asylum, Colchester.
1891. Ewan, John Alfred, M.A. St. And., M.D., C.M.Edin., M.P.C., Greyness, Sleaford, Lincs.
1884. Ewart, C. T., M.D., C.M.Aberd., Senior Assistant Medical Officer, Claybury Asylum, Woodford Bridge, Essex.
1906. Ewens, George Francis William, Major I.M.S. Bengal, c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W.
1907. Exley, John, L.R.C.P.I., M.R.C.S.Eng., Medical Officer, H.M. Prison; Grove House, New Wortley, Leeds.
1894. Farquharson, William F., M.D., C.M.Edin., M.P.C., Medical Superintendent, Counties Asylum, Garlands, Carlisle.
1907. Farries, John Stothart, L.R.C.P.&S.Edin., L.R.F.P.S.Glas., Medical Superintendent, Minda Home, Adelaide, South Australia.
1908. Faulks, Edgar, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, London County Asylum, Bexley.
1903. Fennell, Charles Henry, M.A., M.D.Oxon, M.R.C.P.Lond., Reform Club, Pall Mall, S.W.
1908. Fenton, Henry Felin, M.B., Ch.B.Edin., Assistant Medical Officer, County and City Asylum, Powick, Worcester.
1907. Ferguson, J. J. Harrower, M.B., Ch.B.Edin., Senior Assistant Medical Officer, Fife and Kinross Asylum, Cupar, Fife.
1897. Fielding, James, M.D., Vict. Univ., Canada, M.R.C.S.Eng., L.R.C.P. Edin., 18, The Crescent, Norwich.
1906. Fielding, Saville James, M.B., B.S.Durh., Medical Superintendent, Bethel Hospital, Norwich.
1873. Finch, John E. M., M.A., M.D.Cantab., M.R.C.S.Eng., L.S.A., Holmdale, Stoneygate, Leicester.
1889. Finch, Richard T., B.A., M.B.Cantab., M.R.C.S.Eng., L.S.A., Medical Superintendent, Fisherton House, Salisbury.
1889. Finlay, David, M.D., C.M.Glasg., Medical Superintendent, County Asylum, Bridgend, Glamorgan.
1906. Firth, Arthur Marcus, M.A., M.D., B.Ch.Edin., Wadsley Asylum, near Sheffield.
1903. Fitzgerald, Alexis, L.R.C.P. & S.I., District Asylum, Waterford.
1894. Fitzgerald, Charles E., M.D., M.Ch.Dubl., F.R.C.S.I., Surgeon-Oculist to the King in Ireland, President of the Royal College of Physicians of Ireland, 27, Upper Merrion Street, Dublin.
1888. Fitz-Gerald, Gerald C., B.A., M.D., B.C.Cantab., M.P.C., Medical Superintendent, Kent County Asylum, Chatham, nr. Canterbury.



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1904. Fleming, Wilfrid Louis Remi, M.R.C.S., L.R.C.P.Lond., Suffolk House, Pirbright, Surrey.
1894. Fleury, Eleonora Lilian, M.D., B.Ch.R.U.I., Assistant Medical Officer, Richmond Asylum, Dublin.
1908. Flynn, Thos. Aloysius, L.R.C.P.&S.I., County Asylum, Thorpe, Norwich.
1902. Forde, Michael J., M.D., B.Ch.R.U.I., Assistant Medical Officer, Port-rane Asylum, Ireland.
1911. Forrester, Archibald Thomas William, M.D., B.S., M.R.C.S., L.R.C.P. Lond., Senior Assistant Medical Officer, Leicester and Rutland Counties Asylum, Narborough.
1902. Forster, Hermann Julius, L.R.C.P.I., L.S.A., Assistant Medical Officer, Brighton Borough Asylum, Hayward's Heath.
1906. Forster, R. A., M.B., Ch.B.Aber., The Asylum, Graham's Town, Cape Colony, S. Africa.
1906. Fortune, John, M.D., Ch.B.Edin., D.P.H., M.P.C., Medical Officer of Health, Municipal Office, Newcastle, Staffordshire.
1913. Forward, Ernest Lionel, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, The Coppice, Nottingham.
1913. Fothergill, Claude Francis, B.A.Cantab., M.B., B.C., M.R.C.S., L.R.C.P. Lond., Hensol, Chorley Wood, Herts.
1909. Foulerton, Alexander Grant Russell, F.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Cantab. (*County Medical Officer of Health for E. Sussex*), Middlesex Hospital, W., Wealdside, Lewis.
1861. Fox, Charles H., M.D.St. And., F.R.C.P.E., M.R.C.S.Eng., 35, Heriot Row, Edinburgh.
1912. Fox, Charles J., M.R.C.S.Eng., L.R.C.P.Lond., c/o Drs. G. S. and T. S. Elliot, Blidworth, near Mansfield, Notts.
1881. Fraser, Donald, M.D., C.M.Glasg., F.R.F.P.S., 3, Orr Square, Paisley.
1901. French, Louis Alexander, M.R.C.S., L.R.C.P.Lond., H.M. Prison, Portland, Dorset.
1902. Fuller, Lawrence Otway, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Three Counties' Asylum, Hitchin, Herts.
1906. Gane, Edward Palmer Steward, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Borough Asylum, Ryehope, Sunderland.
1914. Gane, John Munro, L.R.C.P., and L.R.C.S.I., Earlswood Asylum, Redhill, Surrey.
1890. Gaudin, Francis Neel, M.R.C.S.Eng., L.S.A., M.P.C., Medical Superintendent, The Grove, St. Lawrence, Jersey.
1912. Garry, John William, M.B., B.Ch., N.U.I., Assistant Medical Officer, Ennis District Asylum, Ireland.
1912. Gavin, Lawrence, M.B., Ch.B.Edin., L.R.C.P.&S.Edin., L.R.F.P.S. Glasg., Superintendent, Mullingar District Asylum, Ireland.
1885. Gayton, Francis C., M.D., C.M.Aberd., M.R.C.S.Eng., Medical Superintendent, County Asylum, Netherne, Merstham, Surrey.
1908. Geale, William James, L.R.C.P.Edin., L.R.F.P.S.Glasg.
1896. Geddes, John W., M.B., C.M.Edin., Medical Superintendent, County Borough Asylum, Berwick Lodge, Middlesbrough, Yorks.
1892. Gemmel, James Francis, M.B.Glasg., Medical Superintendent, County Asylum, Whittingham, Preston.
1899. Gilfillan, Samuel James, M.A., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Colney Hatch.
1910. Gilfillan, William, M.B., Ch.B.Glasg., St. Ann's Asylum, Port of Spain, Trinidad, B.W.I.
1912. Gill, Eustace Stanley Hayes, M.B., Ch.B.Liverp., Shaftesbury House, Formby, Liverpool.
1889. Gill, Stanley A., B.A.Dubl., M.D.Durh., M.R.C.P.Lond., M.R.C.S.Eng., Shaftesbury House, Formby, Liverpool.
1904. Gillespie, Daniel, M.D. B.Ch.R.U.I., Dipl. Psych., Wadsley Asylum, near Sheffield.

1897. Gilmour, John Rutherford, M.B., C.M., F.R.C.P.Edin., M.P.C., Medical Superintendent, West Riding Asylum, Scalebor Park, Burley-in-Wharfedale, Yorks.
1906. Gilmour, Richard Withers, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, St. Luke's Hospital, E.C.
1911. Gilmour, Walter, M.D., Ch.B.Glasg., 33, La Crosse Terrace, Hillhead, Glasgow.
1878. Glendinning, James, M.D.Glasg., L.R.C.S.Edin., Larchfield, Abergavenny.
1898. Goldie-Scot, Thomas G., M.B., C.M.Edin., M.R.C.S., L.R.C.P.Lond., Pilmuir, Pencaitland, N.B.
1897. Good, Thomas Saxty, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, County Asylum, Littlemore, Oxford.
1889. Goodall, Edwin, M.D., B.S., F.R.C.P.Lond., M.P.C., Medical Superintendent, City Asylum, Cardiff.
1899. Gordon, James Leslie, M.D., C.M.Aberd., Senior Assistant Medical Officer, Caterham Asylum, Surrey.
1905. Gordon-Munn, John Gordon, M.D.Edin., F.R.S.E., Heigham Hall, Norwich.
1901. Gostwyck, C. H. G., M.B., Ch.B., M.R.C.P.Edin., M.P.C., Dipl. Psych., Stirling District Asylum, Larbert.
1912. Graham, Gilbert Malise, M.B., Ch.B.Edin., Assistant Medical Officer, 7, Hartington Gardens, Edinburgh.
1894. Graham, Samuel, L.R.C.P.Lond., Resident Medical Superintendent, District Asylum, Antrim.
1887. Graham, William, M.D.R.U.I., L.R.C.S.Edin., Medical Superintendent, District Lunatic Asylum, Belfast.
1908. Graham, William S., M.B., B.Ch.R.U.I., Assistant Medical Officer, Somerset and Bath Asylum, near Taunton.
1910. Gray, Theodore Grant, M.B., Ch.B.Aberd., M.P.C., New Zealand Government Lunacy Service, Wellington, New Zealand.
1909. Greene, Thomas Adrian, L.R.C.S.&P.Irel., J.P., Medical Visitor, District Asylum, Carlow.
1886. Greenlees, T. Duncan, M.D., C.M.Edin., F.R.S.E., Rostrevor, Kirtleton Avenue, Weymouth.
1912. Greeson, Clarence Edward, M.D., Ch.B.Aberd., Assistant Medical Officer, Barnwood House, Gloucester.
1904. Griffin, Ernest Harrison, B.A.Cantab., L.S.A.Lond., School of Tropical Medicine, Connaught Road, Albert Docks, E.
1901. Grills, Galbraith Hamilton, M.D., B.Ch.R.U.I., Dipl. Psych., Medical Superintendent, "Elmwood," Liverpool Road, Chester.
1900. Grove, Ernest George, M.R.C.S., L.R.C.P.Lond., Bootham Park, York.
1894. Gwynn, Charles Henry, M.D., C.M.Edin., M.R.C.S.Eng., co-Licensee, St. Mary's House, Whitchurch, Salop.
1894. Halsted, Harold Cecil, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Manor Road, Selsey, Sussex.
1903. Hanbury, Langton Fuller, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, West Ham Borough Asylum, Ilford, Essex.
1901. Harding, William, M.D.Edin., M.R.C.P.Lond., Medical Superintendent, Northampton County Asylum, Berry Wood, Northampton.
1899. Harmer, W. A., L.S.A., Resident Superintendent and Licensee, Redlands Private Asylum, Tonbridge, Kent.
1904. Harper-Smith, George Hastie, B.A.Cantab., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Brighton County Borough Asylum, Haywards Heath.
1898. Harris-Liston, J., M.D.Bru., M.R.C.S., L.R.C.P.Lond., L.S.A., Middleton Hall, Middleton St. George, Co. Durham.
1905. Hart, Bernard, M.D.Lond., M.R.C.S.Eng., 29B, Wimpole Street, and Northumberland House, Finsbury Park, N.
1886. Harvey, Bagenal Crosbie, L.R.C.P.&S.Edin., L.A.H.Dubl., Resident Medical Superintendent, District Asylum, Clonmel.

1892. Haslett, William John H., M.R.C.S., L.R.C.P.Lond., M.P.C., Resident Medical Superintendent, Halliford House, Upper Halliford, Shepperton.
1891. Havelock, John G., M.D., C.M.Edin., Physician Superintendent, Montrose Royal Asylum.
1890. Hay, J. F. S., M.B., C.M.Aberd., Inspector-General of Asylums for New Zealand, Government Buildings, Wellington, New Zealand.
1900. Haynes, Horace E., M.R.C.S.Eng., L.S.A., J.P., Littleton Hall, Brentwood.
1895. Hearder, Frederic P., M.D., C.M.Edin., Medical Superintendent, Yorkshire Inebriate Reformatory, Cattal, Whixley, near York.
1911. Heffernan, Capt. P., *I.M.S.*, B.A., M.B., B.Ch.C.U.I., Loocock's Gardens, Kilpauk, Madras.
1905. Henderson, George, M.A., M.B., Ch.B.Edin., 25, Commercial Road, Peckham, S.E.
1906. Herbert, Thomas, M.R.C.S., L.R.C.P.Lond., York City Asylum, Fulford, York.
1877. Hetherington, Charles E., B.A., M.B., M.Ch.Dubl., Medical Superintendent, District Asylum, Londonderry, Ireland.
1877. Hewson, R. W., L.R.C.P.&S.Edin., Medical Superintendent, Coton Hill, Stafford.
1914. Hewson, R. W. Dale, L.R.C.P.&S.Edin., L.R.F.P.&S.Glas., Coton Hill Hospital, Stafford.
1902. Higginson, John Wigmore, M.R.C.S., L.R.C.P.Lond., Resident Medical Officer, Hayes Park Asylum, Hayes Park, Middlesex.
1912. Higson, William Davis, M.B., Ch.B.Liverp., D.P.H., Deputy Medical Officer, H.M. Prison, Brixton; 7, Clovelly Gardens, Upper Tulse Hill, S.W.
1882. Hill, H. Gardiner, M.R.C.S.Eng., L.S.A., Pentillie, Leopold Road, Wimbledon Park, S.W.
1907. Hine, T. Guy Macaulay, M.A., M.D., B.C.Cantab., 37, Hertford Street, Mayfair, W.
1909. Hodgson, Harold West, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Severalls Asylum, Colchester.
1908. Hogg, Archibald, M.B., Ch.B.Glas., 54, High Street, Paisley, N.B.
1900. Holländer, Bernard, M.D.Freib., M.R.C.S., L.R.C.P.Lond., 57, Wimpole Street, W.
1912. Holyoak, Walter L., M.D., B.S.Lond., 77, Welbeck Street, W.
1903. Hopkins, Charles Leighton, B.A., M.B., B.C.Cantab., Medical Superintendent, York City Asylum, Fulford, York.
1913. Hopwood, Joseph Stanley, M.B., B.S., M.R.C.S., M.R.C.P.Lond., Assistant Medical Officer, County Asylum, Winwick, Lancs.
1894. Hotchkis, Robert D., M.A.Glasg., M.D., B.S.Durb., M.R.C.S., L.R.C.P.Lond., M.P.C., Renfrew Asylum, Dykebar, N.B.
1907. Howard, S. Carlisle, M.D., Ch.B.Aberd., Senior Assistant Medical Officer, County Asylum, Chester.
1912. Hughes, Frank Percival, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., The Grove, Pinner, Middlesex.
1900. Hughes, Percy T., M.B., C.M.Edin., D.P.H., Medical Superintendent, Worcestershire County Asylum, Barnsley Hall, Bromsgrove.
1913. Hughes, Robert, M.B.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C. (*School Medical Officer, County Borough of Stoke-on-Trent*), Heron House, Fenton, Stoke-on-Trent.
1904. Hughes, William Stanley, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Shropshire County Asylum, Bicton Heath, Shrewsbury.
1897. Hunter, David, M.A., M.B., B.C.Cantab., L.S.A., Medical Superintendent, The Coppice, Nottingham. (*Secretary for S.E. Division, 1910-1913.*)
1909. Hunter, Douglas William, M.B., Ch.B.Glasg., Assistant Medical Officer, North Riding Asylum, Clifton, York.
1912. Hunter, George Yeates Cobb, Colonel, *I.M.S.*, M.R.C.S., L.R.C.P.Lond., M.P.C., c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W.

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1882. Hyslop, James, D.S.O., M.B., C.M.Edin., Medical Superintendent, Natal Government Asylum, Pietermaritzburg.
1888. Hyslop, Theo. B., M.D., C.M.Edin., M.R.C.P.E., L.R.C.S.E., F.R.S.E., 5, Portland Place, London, W.
1908. Inglis, J. P. Park., M.B., Ch.B.Edin., Assistant Medical Officer, Fountain Temporary Asylum, Tooting Grove, Tooting Graveney, S.W.
1906. Irwin, Peter Joseph, L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Limerick.
1911. Jackson, David James, B.A., M.D., B.Ch.R.U.I., Assistant Medical Officer, Mental Hospital, Whitchurch, Glam.
1908. Jeffrey, Geo. Rutherford, M.D., Ch.B.Glas., F.R.C.P.E., M.P.C., Medical Superintendent, Bootham Park, York.
1907. Jex-Blake, Bertha, M.B., Ch.B.Edin., 13, Ennismore Gardens, S.W.
1910. Johnson, Cecil, M.B., Ch.B.Vict., "Cricklewood," East Sheen, S.W.
1893. Johnston, Gerald Herbert, L.R.C.S.&P.Edin., L.R.F.P.S.Glas., Brooke House, Upper Clapton, N.
1905. Johnston, Thomas Leonard, L.R.C.P.&S.Edin., L.R.F.P.S.Glas., Medical Superintendent, Bracebridge Asylum, Lincoln.
1912. Johnstone, Emma May, L.R.C.P. & S.Edin., L.R.F.P.&S.Glas., M.P.C., Dipl. Psych., Holloway Sanatorium, Virginia Water, Surrey.
1878. Johnstone, J. Carlyle, M.D., C.M.Glas., Medical Superintendent, Roxburgh District Asylum, Melrose.
1903. Johnstone, Thomas, M.D., C.M.Edin., M.R.C.P.Lond., Annandale, Harrogate.
1880. Jones, D. Johnston, M.D., C.M.Edin., Bryn Tirion, Church Walks, Llandudno.
1882. Jones, Robert, M.D.Lond., B.S., F.R.C.P., F.R.C.S.Lond., Medical Superintendent, London County Asylum, Claybury, Woodford, Essex. (*Gen. Secretary from 1897 to 1906.*) (PRESIDENT 1906-7.)
1898. Jones, W. Ernest, M.R.C.S.Eng., L.R.C.P.Lond., The Old Treasury Buildings, Spring Street, Melbourne.
1879. Kay, Walter S., M.D., C.M.Edin., M.R.C.S.Eng., 1, Rutland Park, Sheffield.
1886. Keay, John, M.D., C.M.Glasg., F.R.C.P.Edin., Medical Superintendent, Bangour Village, Uphall, Linlithgowshire.
1909. Keith, William Brooks, M.B., Ch.B.Aberd., M.P.C., Assistant Medical Officer, Kent County Asylum, Maidstone.
1909. Kellas, Arthur, M.B., Ch.B., D.P.H.Aberd., Senior Assistant Physician, Royal Asylum, Aberdeen.
1908. Kelly, Richard, M.D., B.Ch.Dub., Assistant Medical Officer, Storthes Hall Asylum, Kirkburton, near Huddersfield.
1907. Keene, George Henry, M.D., B.Ch.T.C.D., 14, Palmerston Park, Rathmines, Dublin.
1898. Kemp, Norah, M.B., C.M.Glas., Rose Hill, The Mount, York.
1911. Kennedy, Lt.-Col. Arthur (*R.A.M.C.*), L.R.C.P.&S.Irel., Royal Victoria Hospital, Netley.
1899. Kennedy, Hugh T. J., L.R.C.P.&S.I., Assistant Medical Officer, District Asylum, Enniscorthy, Wexford.
1897. Kerr, Hugh, M.A., M.D.Glasg., Medical Superintendent, Bucks County Asylum, Stone, Aylesbury, Bucks.
1902. Kerr, Neil Thomson, M.B., Ch.M.Ed., Medical Superintendent, Lanark District Asylum, Hartwood, Shotts, N.B.
1893. Kershaw, Herbert Warren, M.R.C.S.Eng., L.R.C.P.Lond., Dinsdale Park, near Darlington.
1897. Kidd, Harold Andrew, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, West Sussex Asylum, Chichester.
1903. King, Frank Raymond, B.A.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Peckham House, Peckham, S.E.



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1899. Kirwan, James St. L., B.A., M.B., B.Ch.R.U.I., Medical Superintendent, District Asylum, Ballinasloe, Ireland.
1903. Kough, Edward Fitzadam, B.A., M.B., B.Ch.Dubl., Senior Assistant Medical Officer, County Asylum, Gloucester.
1898. Labey, Julius, M.R.C.S., L.R.C.P.Lond., L.S.A., Medical Superintendent, Public Asylum, Jersey.
1902. Langdon-Down, Percival L., M.A., M.B., B.C.Cantab., Normansfield, Hampton Wick, Middlesex.
1896. Langdon-Down, Reginald L., M.A., M.B., B.C.Cantab., M.R.C.P.Lond., Normansfield, Hampton Wick.
1909. Laurie, James, M.B., Ch.M.Glasg. (*Medical Officer, Smithston Asylum*), Red House, Ardgowan Street, Greenock.
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1898. Lavers, Norman, M.D.Bru., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Bailbrook House, Bath.
1899. Law, Charles D., L.R.C.P.&S.Edin., L.R.F.P.S., 117, Wilderspool Road, Warrington.
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1883. Layton, Henry A., M.R.C.S.Eng., L.R.C.P.Edin., Medical Superintendent, Cornwall County Asylum, Bodmin.
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1899. Leeper, Richard R., F.R.C.S.I., M.P.C., Medical Superintendent, St. Patrick's Hospital, Dublin. (*Hon. Sec. to the Irish Division from 1911.*)
1905. Le Fanu, Hugh, M.B., Ch.M.Aber., Salaga, Northern Territorial Force, Gold Coast Colony, West Africa.
1883. Legge, Richard J., M.D., R.U.I., L.R.C.S.Edin., Medical Superintendent, County Asylum, Mickleover, Derby.
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1894. Lentaigue, Sir John, B.A., F.R.C.S.I., L.R.C.P.I., Medical Visitor of Lunatics to the Court of Chancery, 42, Merrion Square, Dublin.
1863. Ley, H. Rooke, M.R.C.S.Eng., Beaulieu, Westhy Road, Boscombe, Hants.
1903. Littlejohn, Edward Salteine, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, London County Asylum, Cane Hill, Surrey.
1903. Logan, Thomas Stratford, L.R.C.P.&S.Edin., L.R.F.P.S.Glas., D.P.H., Stone Asylum, Aylesbury, Bucks.
1898. Lord, John R., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Horton, Epsom. (*Co-Editor of Journal since 1911; Assistant Editor of Journal, 1900-11.*)
1906. Lowry, James Arthur, M.D.R.U.I., M.B., B.Ch., B.A.O., Medical Superintendent, Surrey County Asylum, Brookwood.
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1872. Lyle, Thomas, M.D., C.M.Glasg., 34, Jesmond Road, Newcastle-on-Tyne.
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1911. Macaskill, Donald Cameron, M.B., Ch.B.Edin., Medical Officer, Malay States.
1880. MacBryan, Henry C., L.R.C.P. & S. Edin., Kingsdown House, Box, Wilts.

1900. McClintock, John, L.R.C.P.&S.Edin., Resident Medical Superintendent, Grove House, Church Stretton, Salop.
1900. McConaghey, John C., M.D., Ch.B.Edin., Medical Superintendent, Parkside Asylum, Macclesfield, Cheshire.
1901. MacDonald, James H., M.B., Ch.B., F.R.F.P.&S.Glasg., Govan District Asylum, Hawkhead, Paisley, N.B.
1884. MacDonald, P. W., M.D., Ch.M.Aberd., Medical Superintendent, Dorset County Asylum, Herrison, Dorchester. (*First Hon. Sec. S.W. Division 1894 to 1905.*) (PRESIDENT, 1907-8.)
1911. MacDonald, Ranald, M.D., Ch.B.Edin., Assistant Medical Officer, London County Asylum, Bexley, Kent.
1905. MacDonald, William Fraser, M.B., Ch.B.Edin., M.P.C., Olive Lodge, Polworth Terrace, Edinburgh.
1905. McDougall, Alan, M.D., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Medical Director, The David Lewis Colony, Sandle Bridge, near Alderley Edge, Cheshire.
1911. McDougall, William, M.A., M.B., B.C.Cantab., M.Sc.Vict., Foxcombe Hill, Oxford.
1906. McDowall, Colin Francis Frederick, M.D., B.S.Durh., Senior Assistant Medical Officer, County Asylum, Cheddleton, Staffs.
1870. McDowall, Thomas W., M.D.Edin., L.R.C.S.E., Medical Superintendent, Northumberland County Asylum, Morpeth. (PRESIDENT, 1897-8.)
1893. Macevoy, Henry John, B.A.(Dounai), M.D., B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., M.P.C., 19, Mowbray Road, Brondesbury, London, N.W.
1895. Macfarlane, Neil M., M.D., C.M.Aber., Medical Superintendent, Government Hospital, Thlotse Heights, Leribe, Basutoland, South Africa.
1883. Macfarlane, W. H., M.B. and Ch.B.Univ. of Melbourne, Medical Superintendent, Hospital for the Insane, New Norfolk, Tasmania.
1902. McGregor, John, M.B., Ch.B.Edin., Senior Assistant Medical Officer, County Asylum, Bridgend, Glam.
1906. MacIlraith, Alex. Robert MacIntyre, L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., Holly House, Rawtenstall, Lancs.
1905. MacIlraith, William MacLaren, L.R.C.P. & S.Edin., L.R.F.P.S.Glasg., L.D.S., Holly House, Rawtenstall, Lancs.
1914. Mackey, Magnus Ross, M.D., Ch.B.Edin., Inverness District Asylum.
1899. McKelvey, Alexander Niel, L.R.C.P.&S.I., Costley House, Epsom, Auckland, New Zealand.
1910. McKenzie, Ivy, M.A., B.Sc., M.B., Ch.B.Glasg., Director, Western Asylums Research Institute, Glasgow, 10, Claythorn Road, Glasgow.
1911. Mackenzie, John Cosserat, M.B., Ch.B.Edin., Romelandfield, Priory Park, St. Albans.
1891. Mackenzie, Henry J., M.B., C.M.Edin., M.P.C., Assistant Medical Officer, The Retreat, York.
1911. MacKenzie, Marion Ellen, M.B., Ch.B.Edin. (*Medical Examiner for the Board of Education*).
1903. Mackenzie, Theodore Charles, M.D., Ch.B., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Inverness.
1899. Mackeown, William John, B.A., M.B., B.Ch.R.U.I., Assistant Medical Officer, County Asylum, Farcham, Hants.
1910. McKillop, Alexander Cameron, M.B., Ch.B.Edin., Senior Physician, Mental Hospital, Porirua, Wellington, New Zealand.
1914. Macleod, T. R., L.R.C.P., L.R.C.S.Edin., L.R.F.P.S.Glasg., Royal Asylum, Montrose.
1904. Macnamara, Eric Danvers, M.A.Camb., M.D., B.C., F.R.C.P., 54, Welbeck Street, W.
1898. Macnaughton, George W. F., M.D., F.R.C.S.Edin., M.R.C.P.Lond., M.P.C., 33, Lower Belgrave Street, Eaton Square, London, S.W.
1914. Macneill, Celia Mary Colquhoun, M.B., Ch.B.Edin., Pathologist, District Asylum, Stirling.
1910. MacPhail, Hector Duncan, M.A., M.D., Ch.B.Edin., Assistant Medical Officer, City Asylum, Gosforth, Newcastle-on-Tyne.

1882. Macphail, S. Rutherford, M.D., C.M.Edin., Derby Borough Asylum, Rowditch, Derby.
1896. Macpherson, Charles, M.D.Glas., L.R.C.P.&S., D.P.H.Edin., Deputy Commissioner in Lunacy, 15, Rutland Square, Edinburgh.
1901. McRae, G. Douglas, M.D., C.M.Edin., F.R.C.P.Ed., Medical Superintendent, District Asylum, Ayr, N.B.
1902. Macrae, Kenneth Duncan Cameron, M.B., Ch.B.Edin., Bangour Village, Dochmont, Linlithgowshire.
1894. McWilliam, Alexander, M.A., M.B., C.M.Aber., Waterval, Odiham, Winchfield, Hants.
1908. Mapother, Edward, M.D., B.S.Lond., F.R.C.S.Eng., Assistant Medical Officer, London County Asylum, Long-Grove, Epsom.
1903. Marnan, John, B.A., M.B., B.Ch.Dubl., Senior Assistant Medical Officer, Second County Asylum, Gloucester.
1896. Marr, Hamilton C., M.D., C.M.Glasg., F.R.F.P.S., M.P.C., Commissioner in Lunacy, 46, Murrayfield Avenue, Edinburgh. (*Hon. Sec. Scottish Division, 1907-1910.*)
1913. Marshall, Robert, M.B., Ch.B.Glas., Assistant Medical Officer, Gartloch Mental Hospital, Gartcosh, N.B.
1905. Marshall, Robert Macnab, M.D., Ch.B.Glasg., M.P.C., Gartnavel Royal Asylum, Glasgow.
1908. Martin, Henry Cooke, M.B., Ch.B.Edin., Assistant Medical Officer, Newport Borough Asylum, Caerleon.
1896. Martin, James Charles, L.R.C.S.&P., Assistant Medical Officer, District Asylum, Letterkenny, Donegal.
1908. Martin, James Ernest, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Long-Grove, Epsom.
1907. Martin, Mary Edith, L.R.C.P.&S.Edin., L.R.F.G.S.Glas., L.S.A., M.P.C. Lond., Bailbrook House, Bath.
1911. Martin, William Lewis, M.A., B.Sc., M.B., C.M.Edin., D.P.H., M.P.C., Dipl. Psych. (*Certifying Physician in Lunacy, Edinburgh Parish Council*), 56, Bruntsfield Place, Edinburgh.
1910. Masson, Charles Armit, M.A., M.B., Ch.B.Aberd., Coton Hill, Stafford.
1911. Mathieson, James Moir, M.B., Ch.B.Aber., Assistant Medical Officer, Wadsley Asylum, Sheffield.
1904. May, George Francis, M.D., C.M.McGill, L.S.A., Winterton Asylum, Ferryhill, Durham.
1912. Melville, William Spence, M.B., Ch.B.Glas., Woodilee Mental Hospital, Lenzie, Glasgow.
1890. Menzies, William F., M.D., B.Sc.Edin., M.R.C.P.Lond., Medical Superintendent, Stafford County Asylum, Cheddleton, near Leek.
1891. Mercier, Charles A., M.D.Lond., F.R.C.P., F.R.C.S.Eng., late Lecturer on Insanity, Westminster Hospital; Moorcroft, Parkstone, Dorset. (*Secretary Educational Committee, 1893-1905. Chairmando. from 1905-12.*) (PRESIDENT, 1908-9.)
1877. Merson, John, M.A., M.D., C.M.Aber., Medical Superintendent, Borough Asylum, Hull.
1871. Mickle, William Julius, M.D., F.R.C.P.Lond., 69, Linden Gardens, Bayswater, W. (PRESIDENT, 1896-7.)
1893. Middlemass, James, M.A., M.D., C.M., B.Sc.Edin., F.R.C.P., M.P.C., Medical Superintendent, Borough Asylum, Ryhope, Sunderland.
1910. Middlemiss, James Ernest, M.R.C.S.Eng., L.R.C.P.Lond., Reginald House, 131, North Street, Leeds.
1912. Middlemiss, Kenneth C., M.B., Ch.B.Glasg., Assistant Medical Officer, Woodilee Mental Hospital, Lenzie.
1883. Miles, George E., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Hospital for the Insane, Rydalmere, New South Wales.
1887. Miller, Alfred, M.B., B.Ch.Dubl., Medical Superintendent, Hatton Asylum, Warwick. (*Registrar since 1902.*)
1904. Miller, James Webster, M.B., Ch.B.Aberd., Wonford House, Exeter.

1911. Miller, Margaret Mair, M.B., Ch.B.Edin., Assistant Medical Officer, Northumberland County Asylum, Morpeth.
1912. Miller, Fleet-Surgeon Richard, *R.N.*, M.B., B.Ch.Dubl., Medical Superintendent, Naval Hospital, Great Yarmouth.
1893. Mills, John, M.B., B.Ch., Dipl. Ment. Dis., R.U.I., District Asylum, Ballinasloe, Ireland.
1913. Milner, Ernest Arthur, M.B., C.M.Edin., Assistant Medical Officer, Royal Albert Institution, Lancaster.
1881. Mitchell, Richard Blackwell, M.D., C.M.Edin., Medical Supt., Midlothian District Asylum.
1911. Moffett, Thomas James Simpson, B.A., M.D., Ch.B.R.U.I., Gallgoom Road, Ballymena, Ireland.
1911. Moll, Jan. Marius, Doc. in Arts and Med, Utrecht Univ., L.M.S.S.A. Lond., M.P.C., West Koppies Asylum, Pretoria, S. Africa.
1913. Molyneux, Benjamin Arthur, B.A., M.D., B.Ch.Dubl., The Decoy, Dunlavin, Co. Wicklow.
1910. Monnington, Richard Caldicott, M.D., Ch.B., D.P.H.Edin., Broughton-in-Furness, Lancs.
1914. Montgomery, Edwin, F.R.C.S.I., L.R.C.P.I. Dipl. Psych. Manch., Prestwich Asylum, Lancs.
1878. Moody, Sir James M., M.R.C.S.Eng., L.R.C.P.Edin., Medical Superintendent, County Asylum, Cane Hill, Coulsdon, Surrey.
1911. Moon, George Bassett, L.R.C.P. & S.Edin., L.R.F.P.S.Glasg., Assistant Medical Officer, County Asylum, Maidstone, Kent.
1885. Moore, Edw. E., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, District Asylum, Letterkenny, Ireland.
1899. Moore, Wm. D., M.D., M.Ch. (R.U.I.), Medical Superintendent, Holloway Sanatorium, Virginia Water, Surrey.
1892. Morrison, Cuthbert S., L.R.C.P. & S.Edin., Medical Superintendent, County and City Asylum, Burghill, Hereford.
1910. Morton, Hugh, M.D., Ch.B.Glasg., 35, Kelvingrove Street, Glasgow.
1896. Morton, W. B., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Wonford House, Exeter.
1896. Mott, F. W., M.D., B.S., F.R.C.P.Lond., F.R.S., 25, Nottingham Place, W.
1896. Mould, Gilbert E., M.R.C.S., L.R.C.P.Lond., The Grange, Rotherham, Yorks.
1897. Mould, Philip G., M.R.C.S.Eng., L.R.C.P.Lond., Overdale, Whitefield, Manchester.
1914. Moyes, John Murray, M.B., Ch.B.Edin., D.P.M.Leeds, Crichton Royal Institution, Dumfries.
1907. Mules, Bertha Mary, M.D., B.S.Durh., Court Hall, Kenton, S. Devon.
1897. Mumby, Bonner Harris, M.D.Aber., D.P.H.Cantab., Medical Superintendent, Borough Asylum, Portsmouth.
1911. Munro, William Thompson, M.D., C.B.Edin., Westgate, Friockheim, Forfarshire.
1911. Muncaster, Anna Lilian, M.B., B.Ch.Edin., Buchnall House, Stoke-on-Trent.
1893. Murdoch, James William Aitken, M.B., C.M.Glasg., Medical Superintendent, Berks County Asylum, Wallingford.
1905. Murrell, Christine Mary, M.D., B.S.Lond., Royal Free Hospital, 86, Porchester Terrace, Hyde Park, W.
1909. Myers, Charles Samuel, M.A., D.Sc., M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Great Shelford, Cambridgeshire.
1903. Navarra, Norman, M.R.C.S., L.R.C.P.Lond., City of London Mental Hospital, near Dartford, Kent.
1880. Neil, James, M.D., C.M.Aberd., M.P.C., Medical Superintendent, Warneford Asylum, Oxford.
1910. Neill, Alexander W., M.D., Ch.B.Edin., Assistant Physician, Craig House, Morningside Drive, Edinburgh.



1903. Nelis, William F., M.D.Durh., L.R.C.P.Edin., L.R.F.P.S.Glasg., Medical Superintendent, Newport Borough Asylum, Caerleon, Mon.
1875. Newington, Alexander, M.B.Camb., M.R.C.S.Eng., Woodlands, Ticehurst.
1873. Newington, H. Hayes, F.R.C.P.Edin., M.R.C.S.Eng., The Gables, Ticehurst, Sussex. (*Chairman Parliamentary Committee*, 1896-1904.) (PRESIDENT, 1889.) (*Treasurer* since 1894.)
1909. Nicoll, James, M.D., C.M.Edin., D.P.H.Lond., Woodside, King's Langley, R.S.O., Herts.
1869. Nicolson, David, C.B., M.D., C.M.Aber., M.R.C.P.Edin., F.S.A.Scot., 201, Royal Courts of Justice, Strand, W.C. (PRESIDENT, 1895-6.)
1893. Nobbs, Athelstane, M.D., C.M.Edin., Layton House, Putney, S.W.
1888. Nolan, Michael J., L.R.C.P.&S.I., M.P.C., Medical Superintendent, District Asylum, Downpatrick.
1909. Norman, Hubert James, M.B., Ch.B., D.P.H.Edin., Assistant Medical Officer, Camberwell House Asylum, S.E.
1885. Oakshott, James A., M.D., M.Ch.R.U.I., Medical Superintendent, District Asylum, Waterford, Ireland.
1903. O'Doherty, Patrick, B.A., M.B., B.Ch.R.U.I., District Asylum, Omagh.
1901. Ogilvy, David, B.A., M.D., B.Ch.Dub., Medical Superintendent, London County Asylum, Long Grove, Epsom, Surrey.
1911. O'Hagan, John Vincent, L.R.C.P.&S.Irel., Roden Place, Dundalk, Ireland.
1910. Oldershaw, George Francis, M.D., Ch.B.Liverp., D.P.H., M.P.C., Deputy Medical Officer, H.M. Prison; and 3, Church Road, Walton, Liverpool.
1911. Oliver, Norman H., M.R.C.S., L.R.C.P.Lond., Charmouth Lodge, Richmond, Surrey.
1892. O'Mara, Francis, L.R.C.P.&S.I., District Asylum, Ennis, Ireland.
1886. O'Neill, Edward D., M.R.C.P.I., L.R.C.P.I., Medical Superintendent, The Asylum, Limerick.
1868. Orange, William, C.B., M.D.Heidelb., F.R.C.P.Lond., M.R.C.S.Eng., 11, Marina Court, Bexhill-on-Sea. (PRESIDENT, 1883.)
1902. Orr, David, M.D., C.M.Edin., M.P.C., Pathologist, County Asylum, Prestwich, Lancs.
1910. Orr, James H. C., M.D., Ch.B.Edin., Rosslyn Lee Asylum, Midlothian.
1899. Osburne, Cecil A. P., F.R.C.S., L.R.C.P.Edin., The Grove, Old Catton, Norwich.
1890. Oswald, Landel R., M.B., C.M.Glasg., M.P.C., Physician Superintendent, Royal Asylum, Gartnavel, Glasgow.
1905. Paine, Frederick, M.D.Bruce, M.R.C.S., L.R.C.P.Lond., Claybury Asylum, Woodford Bridge, Essex.
1907. Parker, James, L.R.C.P.&S.I. (address not known).
1898. Parker, William Arnot, M.B., C.M.Glasg., M.P.C., Medical Superintendent, Gartloch Asylum, Gartcosh, N.B.
1898. Pasmore, Edwin Stephen, M.D., M.R.C.P.Lond., Chelsham House, Chelsham, Surrey.
1899. Paton, Robert N., L.R.C.P.&S.Edin., Medical Officer, Governor's House, H.M. Prison, Holloway, London, N.
1899. Patrick, John, M.B., Ch.B., R.U.I., Medical Superintendent, Tyrone Asylum, Ireland.
1892. Patterson, Arthur Edward, M.D., C.M.Aber., M.P.C., Senior Assistant Medical Officer, City of London Asylum, Dartford.
1907. Peachell, George Ernest, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., Assistant Medical Officer, West Sussex County Asylum, Chichester.
1903. Pearce, Francis H., M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., M.P.C., Shirlett Sanatorium, Broseley, Shropshire.

1910. Pearn, Oscar Phillips Napier, M.R.C.S., L.R.C.P.Lond., L.S.A., Assistant Medical Officer, London County Asylum, Horton, Epsom.
1913. Penny, Robert Augustus Greenwood, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Asylum, Witham, Essex.
1893. Perceval, Frank, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, County Asylum, Prestwich, Manchester, Lancashire.
1911. Perdrau, Jean René, M.D.Lond., L.S.A., M.P.C., Herrison, Dorchester.
1911. Petrie, Alfred Alexander Webster, M.D., Ch.B., F.R.C.S.Edin., Assistant Medical Officer, London County Asylum, Hanwell.
1878. Philipps, Sutherland Rees, M.D., C.M.Q.U.I., F.R.G.S.
1875. Philipson, Sir George Hare, M.A., M.D.Cantab., D.C.L., LL.D., F.R.C.P. Lond., 7, Eldon Square, Newcastle-on-Tyne.
1908. Phillips, John George Porter, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Physician, Bethlem Royal Hospital, Lambeth, S.E. (*Secretary of Educational Committee since 1912.*)
1910. Phillips, John Robert Parry, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, City Asylum, Bristol.
1906. Phillips, Nathaniel Richard, M.D.Bruce., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, County Asylum, Abergavenny, Monmouthshire.
1905. Phillips, Norman Routh, M.D.Bruce., M.R.C.S., L.R.C.P.Lond., St. Andrew's Hospital, Northampton.
1891. Pierce, Bedford, M.D., F.R.C.P.Lond., Medical Superintendent, The Retreat, York. (*Hon. Secretary N. and M. Division 1900-8.*)
1888. Pietersen, J. F. G., M.R.C.S., L.R.C.P.Lond., Ashwood House, Kingswinford, near Dudley, Stafford.
1896. Planck, Charles, M.A.Camb., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Brighton County and Borough Asylum, Haywards Heath.
1912. Plummer, Edgar Curnow, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Laverstock House, Salisbury.
1889. Pope, George Stevens, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Somerset and Bath Asylum, "Westfield," near Wells, Somerset.
1909. Potter, Scott, L.R.C.P.&S.Irel., 6, Brighton Terrace, Bundoran, Co. Dublin.
1913. Potts, William A., M.A.Camb., M.D.Edin.&Birm., M.R.C.S., L.R.C.P.Lond., Consulting Medical Officer to the National Association for the Feeble-minded, 118, Hagley Road, Birmingham.
1876. Powell, Evan, M.R.C.S.Eng., L.S.A., Medical Superintendent, Borough Lunatic Asylum, Nottingham.
1910. Powell, James Farquharson, M.R.C.S., L.R.C.P., D.P.H.Lond., Assistant Medical Officer, The Asylum, Caterham, Surrey.
1912. Power, Pierce M. J., L.R.C.P. & S.I.
1908. Prentice, Reginald Wickham, L.M.S.S.A.Lond., Beauworth Manor, Alresford, Hants.
1904. Pringle, Archibald Douglas, M.B., Ch.B.Aberd., Government Asylum, Pietermaritzburg, Natal, South Africa.
1875. Pringle, Henry T., M.D., C.M.Glasg., J.P., Hawtree, Ferndown, Wimborne.
1901. Pugh, Robert, M.D., Ch.B.Edin., Medical Superintendent, Brecon and Radnor Asylum, Talgarth, S. Wales.
1904. Race, John Percy, M.R.C.S., L.R.C.P.Lond., L.S.A., Winterton Asylum, Ferryhill, Durham.
1913. Rae, Harry James, M.A., M.B., Ch.B.Aber., Kingseat Mental Hospital, New Machar, Aberdeen.
1899. Rainsford, F. E., M.D., B.A.Dubl., L.R.C.P.I., L.R.C.P.&S.E., Resident Physician, Stewart Institute, Palmerston, co. Dublin.
1894. Rambaut, Daniel F., M.A., M.D., B.Ch.Dub., St. Andrews, Northampton.
1910. Rankine, Surg. Roger Aiken, R.N., M.B., B.S., M.R.C.S., L.R.C.P.Lond., M.P.C.
1889. Raw, Nathan, M.D., B.S.Durh., L.S.Sc., F.R.C.S.Edin., M.R.C.P.Lond., M.P.C., 66, Rodney Street, Liverpool.
1893. Rawes, William, M.D.Durh., F.R.C.S.Eng., Medical Superintendent, St. Luke's Hospital, Old Street, London, E.C.

1870. Rayner, Henry, M.D. Aberd., M.R.C.P. Edin., 16, Queen Anne Street, London, W. (PRESIDENT, 1884.) (*General Secretary*, 1878-89.) (*Co-Editor of Journal* 1895-1911.)
1913. Read, Charles Stanford, M.B. Lond., M.R.C.S., L.R.C.P. Lond., Assistant Medical Officer, Fisherton House, Salisbury.
1903. Read, George F., L.R.C.S. & P. Edin., Hospital for the Insane, New Norfolk, Tasmania.
1899. Redington, John, F.R.C.S. & L.R.C.P.I., Portrane Asylum, Donabate, Co. Dublin.
1911. Reeve, Ernest Frederick, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., Senior Assistant Medical Officer, County Asylum, Rainhill, Lancs.
1911. Reid, Daniel McKinley, M.D., Ch.B. Glasg., Horton Asylum, Epsom.
1910. Reid, William, M.A. St. And., M.B., Ch.B. Edin., Senior Assistant Medical Officer, Burntwood Asylum, Lichfield.
1887. Reid, William, M.D., C.M. Aberd., Physician Superintendent, Royal Asylum, Aberdeen.
1886. Revington, George T., M.A., M.D., B.Ch. Dubl., M.P.C., Medical Superintendent, Central Criminal Asylum, Dundrum, Ireland.
1907. Reynolds, Ernest Septimus, B.Sc. Vict., M.D., F.R.C.P. Lond., M.R.C.S. Eng., 2, St. Peter's Square, Manchester.
1899. Rice, David, M.D. Brux., M.R.C.S., L.R.C.P., D.P.H., Medical Superintendent, City Asylum, Hillesdon, Norwich.
1897. Richard, William J., M.A., M.B., Ch.M. Glasg., Medical Officer, Govan Parochial Asylum, Merryflats, Govan.
1899. Richards, John, M.B., C.M. Edin., F.R.C.S.E., Medical Superintendent, Joint Counties Asylum, Carmarthen.
1907. Rivers, William Gregory, M.B., Ch.B. Edin., Assistant Medical Officer, Cornwall County Asylum, Bodmin.
1911. Robarts, Henry Howard, M.D., Ch.B. Edin., D.P.H. Glasg., Ennerdale, Haddington, Scotland.
1903. Roberts, Norcliffe, M.D., B.S. Durh., Senior Assistant Medical Officer, Horton Asylum, near Epsom, Surrey.
1887. Robertson, Geo. M., M.D., C.M., F.R.C.P. Edin., M.P.C., Physician-Superintendent, Royal Asylum, Morningside, Edinburgh.
1908. Robertson, George Dunlop, L.R.C.S. & P. Edin., Dipl. Psych., Assistant Medical Officer, District Asylum, Hartwood, Lanark.
1910. Robertson, Jane I., M.B., Ch.B. Glasg., c/o Masson, 31, Lacrosse Terrace, Glasgow; and The Ivyleaf, Limavady, Ireland.
1895. Robertson, William Ford, M.D., C.M. Edin., 60, Northumberland Street, Edinburgh.
1900. Robinson, Harry A., M.D., Ch.B. Vict., 56, West Derby Street, Liverpool.
1911. Robinson, John Hargreaves, L.A.H. Dubl., F.R.G.S., F.Z.S., 130, Sussex Road, Southport.
1911. Robson, Capt. Hubert Alan Hirst, *I.M.S.*, M.R.C.S., L.R.C.P. Lond., c/o Messrs. Grindlay, Groome, Bombay, India.
1908. Rodgers, Frederick Millar, M.D., Ch.B. Vict., D.P.H., Senior Medical Officer, County Asylum, Winwick, Lancs.
1908. Rolleston, Charles Frank, B.A., M.B., Ch.B. Dub., Assistant Medical Officer, County of London, Manor Asylum, Epsom.
1895. Rolleston, Lancelot W., M.B., B.S. Durh., Medical Superintendent, Middlesex County Asylum, Napsbury, near St. Albans.
1899. Rorie, George Arthur, M.D., Ch.B. Edin., M.P.C., 163, Princes Street, Dundee.
1888. Ross, Chisholm, M.D. Syd., M.B., C.M. Edin., 151, Macquarie Street, Sydney, New South Wales.
1913. Ross, Derind Maxwell, M.B., Ch.B. Edin., Morningside Asylum, Edinburgh.
1910. Ross, Donald, M.B., Ch.B. Edin., Royal Asylum, Morningside, Edinburgh.
1905. Ross, Sheila Margaret, M.D., Ch.B. Edin., Assistant Medical Officer of Health, 42, Carill Drive, Fallowfield, Manchester.
1899. Rotherham, Arthur, M.A., M.B., B.C. Cantab., Commissioner under Ment. Defec. Act, Board of Control, 66, Victoria Street, Westminster, S.W.

1906. Rowan, Marriott Logan, B.A., M.D.R.U.I., Assistant Medical Officer, Derby County Asylum, Mickleover.
1884. Rowe, Edmund L., L.R.C.P.&S.Edin., Medical Superintendent, Borough Asylum, Ipswich.
1883. Rowland, E. D., M.B., C.M.Edin., The Public Hospital, George Town, Demerara, British Guiana.
1902. Rows, Richard Gundry, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Pathologist, County Asylum, Lancaster.
1877. Russell, Arthur P., M.B., C.M., M.R.C.P.Edin., The Lawn, Lincoln.
1912. Russell, John Ivison, M.B., Ch.B.Glasg., West Riding Asylum, Storthes Hall, Kirkburton, Huddersfield.
1912. Rutherford, Cecil, M.B., B.Ch.Dubl., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.
1907. Rutherford, Henry Richard Charles, F.R.C.S.I., L.R.C.P.I., D.P.H., St. Patrick's Hospital, James's St., Dublin.
1896. Rutherford, James Mair, M.B., C.M., F.R.C.P.Edin., M.P.C., Brislington House, Bristol.
1913. Ryan, Ernest Noel, B.A., M.D., B.Ch.Dub., Assistant Medical Officer, Northumberland House, Green Lane, Finsbury Park, N.
1902. Sall, Ernest Frederick, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Borough Asylum, Canterbury.
1908. Samuels, William Frederick, L.M.&L.S.Dubl., Medical Superintendent, Central Asylum, Tangong, Rambutan, Federated Malay States.
1894. Sankey, Edward H. O., M.A., M.B., B.C.Cantab., Resident Medical Licensee, Boreatton Park Licensed House, Baschurch, Salop.
- \* Sankey, R. H. Heurtley, M.R.C.S.Eng., 3, Marston Ferry Road, Oxford.
1912. Sargeant, John Noel, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Newland House, Tooting Bec Road, S.W. (*Secretary South-Eastern Division from 1913.*)
1873. Savage, Sir Geo. H., M.D., F.R.C.P.Lond., 26, Devonshire Place, W. (*Late Editor of Journal.*) (PRESIDENT, 1886.)
1906. Scanlan, John J., L.R.C.P.&S.Edin., L.R.F.P.S.Glasg., D.P.H., 1, Castle Court, Cornhill, E.C.
1896. Scott, James, M.B., C.M.Edin., 98, Baron's Court Road, West Kensington, W.
1889. Scowcroft, Walter, M.R.C.S., L.R.C.P.I., Medical Superintendent, Royal Lunatic Hospital, Cheadle, near Manchester.
1880. Seccombe, George S., M.R.C.S., L.R.C.P.Lond., c/o Messrs. H. S. King and Co., 65, Cornhill, E.C.
1906. Sephton, Robert Poole, B.A.Cantab., M.R.C.S., L.R.C.P.Lond., County Lunatic Asylum, Lancaster.
1882. Seward, William J., M.B.Lond., M.R.C.S.Eng., 15, Chandos Avenue, Oakleigh Park, N.
1913. Shand, George Ernest, M.B., Ch.B.Aberdeen, City Mental Hospital, Winson Green, Birmingham.
1901. Shaw, B. Henry, M.B., B.Ch.R.U.I., Assistant Medical Officer, County Asylum, Stafford.
1909. Shaw, Capt. William Samuel J., M.B., B.Ch.R.U.I., *J.M.S.*, Superintendent, c/o Messrs. Grindlay & Co., 54, Parliament Street, London, S.W.
1905. Shaw, Charles John, M.D., Ch.B., F.R.C.P.E., Medical Superintendent, Argyll and Bute Asylum, Lochgilphead.
1891. Shaw, Harold B., B.A., M.B., B.C., D.P.H.Camb., Medical Superintendent, Isle of Wight County Asylum, Whitecroft, Newport, Isle of Wight.
1904. Shaw, Patrick, L.R.C.P.&S.Edin., Senior Medical Officer, Hospital for the Insane, Kew, Victoria, Australia.
- \* Shaw, T. Claye, B.A., M.D.Lond., F.R.C.P.Lond., 33, Weymouth Street, W.
1882. Sheldon, Thomas S., M.B.Lond., M.R.C.S., F.R.A.S., Parkside, Lache Lane, Chester.



1909. Shepherd, George Ferguson, F.R.C.S., L.R.C.P.Irel., D.P.H., 9, Ogle Terrace, South Shields.
1900. Shera, John E. P., M.D.Brux., L.R.C.P.&S.Irel., Somerset County Asylum, Wells, Somerset.
1912. Sheridan, Gerald Brinsley, M.B., B.Ch.R.U.I., Assistant Medical Officer, Portrane Asylum, Dublin.
1877. Shuttleworth, George E., B.A.Lond., M.D.Heidelb., M.R.C.S. and L.S.A. Eng., 8, Lancaster Place, Hampstead, N.W.
1901. Simpson, Alexander, M.A., M.D., C.M.Aber., Medical Superintendent, County Asylum, Winwick, Newton-le-Willows, Lancashire.
1905. Simpson, Edward Swan, M.D., Ch.B.Edin., East Riding Asylum, Beverley, Yorks.
1911. Simpson, John C., M.B., Ch.B.Edin., Fernbank, Wick, Caithness, N.B.
1888. Sinclair, Eric, M.D., C.M.Glasg., Inspector-General of Insane, Richmond Terrace, Demain, Sydney, N.S.W.
1891. Skeen, James Humphry, M.B., Ch.M.Aber., Medical Superintendent, Kirklands Asylum, Bothwell.
1912. Skene, Leslie Henderson, M.B., Ch.B.Edin., Dipl. Psych., Assistant Medical Officer, Hartwood Asylum, Lanarkshire.
1900. Skinner, Ernest W., M.D., C.M.Edin., J.P., Mansfield, Rye, Sussex.
1901. Slater, George N. O., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Essex County Asylum, Brentwood.
1897. Smalley, Sir Herbert, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Prison Commission, Home Office, Whitehall, S.W.
1910. Smith, Gayton Warwick, M.D.Lond., B.S.Durh., D.P.H.Cantab., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Middlesex County Asylum, Tooting, S.W.
1905. Smith, George William, M.B., Ch.B.Edin., Holloway Sanatorium, Virginia Water, Surrey.
1907. Smith, Henry Watson, M.D., Ch.B.Aberd., Medical Superintendent, Lebanon Hospital for the Insane, Asfurujeh, near Beyrout, Syria.
1899. Smith, John G., M.D., C.M.Edin., Herts County Asylum, Hill End, St. Albans, Herts.
1885. Smith, R. Percy, M.D., B.S., F.R.C.P.Lond., M.P.C., 36, Queen Anne Street, Cavendish Square, W. (*General Secretary*, 1896-7. *Chairman Educational Committee*, 1899-1903). (PRESIDENT, 1904-5.)
1913. Smith, Thomas Cyril, M.B., B.Ch.Edin., 27, Chalmers Street, Edinburgh.
1911. Smith, Thomas Waddelow, F.R.C.S., L.R.C.P.Lond., M.P.C., Assistant Medical Officer, Wonford House, Exeter.
1884. Smith, W. Beattie, F.R.C.S.Edin., L.R.C.P.Edin., M.P.C., 4, Collins Street, Melbourne, Victoria.
1903. Smith, William Maule A., M.D., Ch.B.Edin., M.R.C.P.Edin., M.P.C., Senior Assistant Medical Officer, Worcester County Asylum, Barnsley(Hall, Bromsgrove.
1901. Smyth, Robt. B., M.A., M.B., Ch.B.Dubl., Medical Superintendent, County Asylum, Gloucester.
1899. Smyth, Walter S., M.B., B.Ch.R.U.I., Assistant Medical Officer, County Asylum, Antrim.
1913. Somerville, Henry, B.Sc., M.R.C.S., L.R.C.P.Lond., F.C.S., Harrold, Sharnbrook, Bedfordshire.
1885. Soutar, James Grieg, M.B., C.M.Edin., M.P.C., Medical Superintendent, Baruwood House, Gloucester. (PRESIDENT, 1912-13.)
1906. Spark, Percy Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, London County Asylum, Banstead, Surrey.
1883. Spence, John Buchan, M.B., C.M.Edin., L.R.C.P.&S.Edin., The Asylum, Colombo, Ceylon.
1875. Spence, J. Beveridge, M.D., M.C.Q.U.I., Medical Superintendent, Burntwood Asylum, near Lichfield. (*First Registrar*, 1892-1899; *Chairman Parliamentary Committee*, 1910-12.) (PRESIDENT, 1899-1900.)
1913. Spensley, Frank Oswald, M.R.C.S., L.R.C.P.Lond., Senior Medical Officer, Darenth Asylum, Dartford, Kent.

1891. Stansfield, T. E. K., M.B., C.M.Edin., Medical Superintendent, London County Asylum, Bexley, Kent.
1901. Starkey, William, M.B., B.Ch.R.U.I., Assistant Medical Officer, Lancashire County Asylum, Prestwich, near Manchester.
1907. Steele, Patrick, M.D., Ch.B., M.R.C.P.Edin., Assistant Medical Officer, Bangour Village, Dechmont, Linlithgowshire.
1898. Steen, Robert H., M.D.Lond., Medical Superintendent, City of London Asylum, Stone, Dartford. (*Hon. Sec. S.E. Division*, 1905-10.)
1914. Stephens, Harold Freize, M.R.C.S.Lond., L.R.C.P.Eng., Earlswood Asylum, Redhill.
1912. Stevenson, William Edward, M.B., B.S.Durh., Senior Assistant Medical Officer, City and County Asylum, Hereford.
1909. Steward, Sidney John, M.D., B.C.Cantab., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Langton Lodge, Farncombe, Surrey.
1868. Stewart, James, F.R.C.S.Edin., L.R.C.P.Irel., Killydonnell, 28, Glebe Road, Barnes.
1913. Stewart, Ronald, M.B., Ch.B.Glasg., Gartlock Asylum, Gartcosh, Glasgow.
1887. Stewart, Rothsay C., M.R.C.S.Eng., L.S.A., Medical Superintendent, County Asylum, Narborough, near Leicester.
1905. Stilwell, Henry Francis, L.R.C.P.&S.E., Hayes Park, Hayes, Middlesex.
1899. Stilwell, Reginald J., M.R.C.S., L.R.C.P.Lond., Moorcroft House, Hillingdon, Middlesex.
1897. Stoddart, William Henry Butter, M.D., B.S., F.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Resident Physician and Superintendent, Bethlem Royal Hospital, London, S.E. (*Hon. Sec. Educational Committee*, 1908-1912.)
1909. Stokes, Frederick Ernest, M.B., Ch.B.Glasg., D.P.H.Cantab., Assistant Medical Officer, Borough Asylum, Portsmouth.
1905. Strathearn, John, M.D., Ch.B.Glasg., F.R.C.S.E., 23, Magdalen Yard Road, Dundee.
1903. Stratton, Percy Houghton, M.R.C.S., L.R.C.P.Lond., 10, Hanover Square, W.
1885. Street, C. T., M.R.C.S., L.R.C.P.Lond., Haydock Lodge, Ashton, Newton-le-Willows, Lancashire.
1908. Stuart, Francis Arthur Knox, B.A.Cantab., L.S.A.Lond., Assistant Medical Officer, West Sussex Asylum, Chichester.
1909. Stuart, Frederick J., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Northampton County Asylum, Berrywood.
1900. Sturrock, James Prain, M.A.St.And., M.D., C.M.Edin., H.M. Prison, Perth, N.B.
1886. Suffern, Alex. C., M.D., M.Ch.R.U.I., Medical Superintendent, Ruberry Hill Asylum, near Bromsgrove, Worcestershire.
1894. Sullivan, William C., M.D., B.Ch.R.U.I., Rampton Criminal Lunatic Asylum, South Leventon, Lincolnshire.
1910. Sutherland, Joseph Roderick, M.B., Ch.B.Glasg., M.R.C.S., L.R.C.P., D.P.H., 468, Great Western Road, Glasgow.
1877. Swanson, George I., M.D.Edin., 23, St. Mary's, York.
1908. Swift, Eric W. D., M.B.Lond., Medical Superintendent, Government Asylum, Bloemfontein.
1908. Tattersall, John, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Hanwell, W.
1910. Taylor, Arthur Loudoun, B.Sc., M.B., Ch.B., M.R.C.P.Edin., Hawkhead Asylum, Paisley.
1897. Taylor, Frederic Ryott Percival, M.D., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, East Sussex Asylum, Hellingly.
1908. Thomas, Joseph D., B.A., M.B., B.C.Cantab., Northwoods House, Winterbourne, Bristol.
1911. Thomas, William Rees, M.D., B.S.Lond., M.R.C.S., M.R.C.P.Lond., M.P.C., Pathologist, East Sussex Asylum, Hellingly.

1880. Thomson, David G., M.D., C.M.Edin., Medical Superintendent, County Asylum, Thorpe, Norfolk.
1903. Thomson, Herbert Campbell, M.D., F.R.C.P.Lond., Assist. Physician Middlesex Hospital, 34, Queen Anne Street, W.
1905. Thomson, James Hutcheon, M.B., Ch.B.Aberd., M.P.C., Colonial Med. Off. East Afric. Protectorate.
1905. Tidbury, Robert, M.D., M.Ch. R.U.I., Heathlands, Foxhall Road, Ipswich.
1901. Tighe, John V. G. B., M.B., B.Ch.R.U.I., Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland.
1914. Tisdall, C. J., M.B., Ch.B., Crichton Royal Institution, Dumfries.
1903. Topham, J. Arthur, B.A.Cantab., M.R.C.S., L.R.C.P.Lond., County Asylum, Chartham, Kent.
1896. Townsend, Arthur A. D., M.D., B.Ch.Birm., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Hospital for Insane, Barnwood House, Gloucester.
1904. Treadwell, Oliver Ferreira Naylor, M.R.C.S.Eng., L.S.A., H. M. Prison, Parkhurst, I. of W.
1903. Tredgold, Alfred F., M.R.C.S., L.R.C.P.Lond., 6, Dapdune Crescent, Guildford, Surrey.
1908. Tuach-MacKenzie, William, M.D., Ch.B.Aberd., Medical Superintendent, Royal and District Asylums, Dundee.
1881. Tuke, Charles Molesworth, M.R.C.S.Eng., Chiswick House, Chiswick.
1888. Tuke, John Batty, M.D., C.M., F.R.C.P.Edin., Resident Physician, Saughton Hall, Edinburgh; Linden Lodge, Loanhead, Midlothian.
1885. Tuke, T. Seymour, M.A., M.B., B.Ch.Oxon., M.R.C.S.Eng., Chiswick House, Chiswick, W.
1877. Turnbull, Adam Robert, M.B., C.M.Edin., Medical Superintendent, Fife and Kinross District Asylum, Cupar. (*Hon. Secretary for Scottish Division, 1894-1901.*) (PRESIDENT-ELECT, 1909-10.)
1906. Turnbull, Peter Mortimer, M.B., B.Ch.Aberd., Tooting Bee Asylum, Tooting, S.W.
1909. Turnbull, Robert Cyril, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Essex County Asylum, Colchester.
1889. Turner, Alfred, M.D., C.M.Edin., Plympton House, Plympton, S. Devon.
1906. Turner, Frank Douglas, M.B.Lond., M.R.C.S., L.R.C.P.Lond., Medical Officer, Royal Eastern Counties Institution, Colchester.
1890. Turner, John, M.B., C.M.Aberd., Medical Superintendent, Essex County Asylum, Brentwood.
1878. Urquhart, Alex. Reid, M.D., F.R.C.P.E., 44, Ormidale Terrace, Edinburgh. (*Co-Editor of Journal, 1894-1910.*) (*Hon. Sec. for Scottish Division, 1886-94.*) (PRESIDENT, 1898-9.)
1904. Vincent, George A., M.B., B.Ch.Edin., Assistant Medical Superintendent, St. Ann's Asylum, Trinidad, B.W.I.
1894. Vincent, William James N., M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Wadsley Asylum, near Sheffield.
1911. Waldron, Ethel Annie, M.B., Ch.B.Birm., Dipl. Psych., Assistant Medical Officer, West Riding Asylum, Wakefield.
1913. Walford, Harold R.S., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Powich Asylum, Worcester.
1914. Walker, Robert Clive, M.B., Ch.B.Edin., West Riding Asylum, Menston, near Leeds.
1896. Walker, William F., L.R.C.S.Edin., L.S.A.Lond.
1908. Wallace, John Andrew Leslie, M.D., Ch.B.Edin., M.P.C., The Hospital, Gladesville, Sydney, N.S.W.
1912. Wallace, Vivian, L.R.C.P. & S.I., Assistant Medical Officer, Mullingar District Asylum, Mullingar.
1889. Warnock, John, M.D., C.M., B.Sc.Edin., Medical Superintendent, Abbasiyeh Asylum, nr. Cairo, Egypt.
1910. Waters, John Patrick F., B.A., M.B., Ch.B., R.U.I., Assistant Medical Officer, County Asylum, Melton, Suffolk.

1895. Waterston, Jane Elizabeth, M.D.Brux., L.R.C.P.I., L.R.C.S.Edin., M.P.C., 85, Parliament Street, Box 78, Cape Town, South Africa.
1902. Watson, Frederick, M.B., C.M.Edin., The Grange, East Finchley, London, N.
1891. Watson, George A., M.B., C.M.Edin., M.P.C., Lyons House, Rainhill, Liverpool.
1908. Watson, H. Ferguson, M.D., Ch.B.Glas., L.R.C.P.&S.E., L.F.P.S.Glas., 2, Bay View, H.M. Prison, Peterhead.
1885. Watson, William Riddell, L.R.C.S. and L.R.C.P.Edin., 3, Tufnell House, Anson Road, Tufnell Park, N.
1910. Watson, William Scott, M.D., Ch.B.Edin., c/o Mental Hospital Dept., Government Buildings, Wellington, New Zealand.
1911. Webber, Leonard Mortis, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Surrey County Asylum, Netherne, Merstham.
1911. White, Edward Barton C., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Cardiff City Mental Hospital, Whitechurch.
1884. White, Ernest William, M.B.Lond., M.R.C.P.Lond., Betley House, nr. Shrewsbury. (*Hon. Sec. South-Eastern Division, 1897-1900.*) (*Chairman Parliamentary Committee, 1904-7.*) (*PRESIDENT 1903-4.*)
1911. White, H. Wilson, M.B., B.Ch.N.U.I., M.P.C., Assistant Medical Officer, City of Westminster Union Infirmary, Fulham Road, W.
1905. Whittington, Richard, M.A., M.D.Oxon., M.R.C.S., L.R.C.P.Lond., Downford, Montpelier Road, Brighton.
1889. Whitwell, James Richard, M.B., C.M.Edin., Medical Superintendent, Suffolk County Asylum, Melton Woodbridge.
1903. Wigan, Charles Arthur, M.D.Durh., M.R.C.S.Eng., L.S.A., Deepdene, Portishead, Somerset.
1883. Wiglesworth, Joseph, M.D., F.R.C.P.Lond., Springfield House, Winscombe, Somerset. (*PRESIDENT, 1902-3.*)
1913. Wilkins, William Douglas, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Winwick Asylum, Warrington.
1900. Wilkinson, H. B., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer Plymouth Borough Asylum, Blackadon, Ivybridge, South Devon.
1911. Will, John Henderson, M.B., Ch.B.Aberd., Te-Kuiti, New Zealand.
1887. Will, John Kennedy, M.A., M.D., C.M.Aberd., M.P.C., Bethnal House, Cambridge Road, N.E.
1907. Williams, Charles E. C., M.A., M.D., B.Ch.Dubl., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey; Greystones, Canford Cliff, Bournemouth.
1905. Williams, David John, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Asylum, Kingston, Jamaica.
1912. Wilson, Samuel Alexander Kinneir, M.A., M.D., B.Sc.Edin., M.R.C.P.Lond., Registrar, National Hospital, Queen's Square, 14, Harley Street, W.
1897. Winder, W. H., M.R.C.S., L.R.C.P.Lond., D.P.H.Cantab., Deputy Medical Officer, H.M. Convict Prison, Aylesbury.
1875. Winslow, Henry Forbes, M.D.Lond., M.R.C.P.Lond., M.R.C.S.Eng., 164, Marine Parade, Brighton.
1899. Wolseley-Lewis, Herbert, M.D.Brux., F.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Kent County Asylum, Barming Heath, Maidstone. (*Secretary Parliamentary Committee, 1907-12. Chairman since 1912.*)
1904. Wood, Martin Stanley, M.D., Ch.B.Vict., Royal Asylum, Cheadle, Cheshire.
1869. Wood, T. Outterson, M.D.Durh., M.R.C.P.Lond., F.R.C.P., F.R.C.S. Edin., 7, Abbey Crescent, Torquay. (*PRESIDENT, 1905-6.*)
1912. Woods, James Cowan, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, The Priory, Roehampton.
1885. Woods, J. F., M.D.Durh., M.R.C.S.Eng., 7, Harley Street, Cavendish Square, W.
1912. Wootton, John Charles, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Cane Hill Asylum, Surrey.

1900. Worth, Reginald, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Middlesex Asylum, Tooting, S.W.
1862. Yellowlees, David, L.L.D.Glas., M.D.Edin., F.R.F.P.S.Glasg., 6, Albert Gate, Dowan Hill, Glasgow. (PRESIDENT, 1890.)
1914. Yellowlees, Henry, M.B., Ch.B.Glas., Perth District Asylum, Murthley.
1910. Younger, Edward George, M.D.Brux., M.R.C.P.Lond., M.R.C.S., L.S.A., D.P.H., Physician to the Finsbury Dispensary, 2, Mecklenburgh Square, W.C.

ORDINARY MEMBERS	...	...	...	...	...	695
HONORARY MEMBERS	...	...	...	...	...	34
CORRESPONDING MEMBERS	...	...	...	...	...	18

Total ... .. 747

*Members are particularly requested to send changes of address, etc., to Dr. M. Abdy Collins, the Honorary General Secretary, 11, Chandos Street, Cavendish Square, London, W., and in duplicate to the Printers of the Journal, Messrs. Adlard and Son, 23, Bartholomew Close, London, E.C.*

## OBITUARY.

### *Honorary Member.*

1904. Tuke, Sir John Batty, M.D., D.Sc., LL.D., F.R.C.P., 20, Charlotte Square, Edinburgh.

### *Corresponding Member.*

1897. Näcke, Dr. P., Hubertusberg Asylum, Leipzig.

### *Members.*

1899. Longworth, Stephen G., L.R.C.P., L.R.C.S.I., County Asylum, Melton, Suffolk.
1911. McCalman, Hugh, M.A., M.B., Ch.B.Edin., Assistant Medical Officer, County Asylum, Lancaster.
1904. O'Downey, Augustine Francis, L.R.C.P.&S. Edin., c/o J. F. Fagan, jun., L.R.C.S., Old Castle, Co. Meath.
1857. Tate, William B., M.D.Aber., M.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent, Lunatic Hospital, The Coppice, Nottingham.



List of those who have passed the Examination for the Certificate of Efficiency in Psychological Medicine, entitling them to append M.P.C. (Med.-Psych. Certif.) to their names.

- |                                 |                           |
|---------------------------------|---------------------------|
| Adams, J. Barfield.             | Conolly, Richard M.       |
| Adamson, Robert O.              | Conry, John.              |
| Adkins, Percy, R.               | Cook, William Stewart.    |
| Ainley, Fred Shaw.              | Cooper, Alfred J. S.      |
| Ainslie, William.               | Cope, George Patrick.     |
| Alcock, B. J.                   | Corner, Harry.            |
| Alexander, Edward H.            | Cotton, William.          |
| Anderson, A. W.                 | Couper, Sinclair.         |
| Anderson, Bruce Arnold.         | Cowan, John J.            |
| Anderson, John.                 | Cowie, C. G.              |
| Andriezen, W.                   | Cowie, George.            |
| Apthorp, F. W.                  | Cowper, John.             |
| Armour, E. F.                   | Cox, Walter H.            |
| Attegalie, J. W. S.             | 8 Craig, M.               |
| Aveline, H. T. S.               | Cram, John.               |
| Ballantyne, Harold S.           | Crills, G. H.             |
| Barbour, William.               | Cross, Edward John.       |
| Barker, Alfred James Glanville. | Cruickshank, George.      |
| Bashford, Ernest Francis.       | Cullen, George M.         |
| Bazalgette, S.                  | Cunningham, James F.      |
| Begg, William.                  | Dalgetty, Arthur B.       |
| Belben, F.                      | Davidson, Andrew.         |
| Bird, James Brown.              | Davidson, William.        |
| Blachford, J. Vincent.          | 6 Dawson, W. R.           |
| Black, E. J.                    | De Silva, W. H.           |
| Black, Robert S.                | 11 Devine, H.             |
| Black, Victor.                  | Distin, Howard.           |
| Blackwood, John.                | Dixon, J. F.              |
| Blandford, Henry E.             | Donald, Wm. D. D.         |
| 7 Bond, C. Hubert.              | Donaldson, R. L. S.       |
| Bond, R. St. G. S.              | Donellan, James O'Connor. |
| Bowlan, Marcus M.               | Douglas, A. R.            |
| Boyd, James Paton.              | Downey, Augustine.        |
| 13 Boyd, William                | Drummond, Russell J.      |
| Bradley, J. T.                  | Eager, Richard.           |
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| Brodie, Robert C.               | Earls, James H.           |
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| Brown, William.                 | Easterbrook, Charles C.   |
| Browne, Hy. E.                  | Eden, Richard A. S.       |
| Bruce, John.                    | Edgerley, S.              |
| Bruce, Lewis C.                 | Edwards, Alex. H.         |
| Brush, S. C.                    | Elkins, Frank A.          |
| Bulloch, William.               | Ellis, Clarence J.        |
| Calvert, William Dobree.        | English, Edgar.           |
| Cameron, James.                 | Eustace, J. N.            |
| Campbell, Alex Keith.           | Eustace, Henry Marcus.    |
| Campbell, Alfred W.             | Evans, P. C.              |
| Campbell, Peter.                | Ewan, John A.             |
| Carmichael, W. J.               | Ezard, Ed. W.             |
| Carruthers, Samuel W.           | Falconer, A. R.           |
| Carter, Arthur W.               | Falconer, James F.        |
| Chambers, James.                | Farquharson, Wm. Fredk.   |
| Chambers, W. D.                 | Fennings, A. A.           |
| Chapman, H. C.                  | Ferguson, Robert.         |
| Christie, William.              | Findlay, G. Landsborough. |
| Clarke, Robert H.               | Fitzgerald, Gerald.       |
| Clayton, Frank Herbert A.       | Fleck, David.             |
| Clayton, Thomas M.              | Fortune, J.               |
| Clinch, Thomas Aldous.          | Fox, F. G. T.             |
| Coles, Richard A.               | Fraser, Donald Allan.     |
| Collie, Frank Lang.             | Fraser, Thomas.           |
| Collier, Joseph Henry.          | Frederick, Herbert John.  |

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 Gemmell, William.  
 Genney, Fred. S.  
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 Gill, J. Macdonald.  
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 Goodall, Edwin.  
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 Graham, Dd. James.  
 Graham, F. B.  
 Grainger, Thomas.  
 Grant, J. Wemyss.  
 Grant, Lacklan.  
 Gray, Alex. C. E.  
 Gray, Theodore G.  
 Griffiths, Edward H.  
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 Howden, Robert.  
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 Law, Thomas Bryden.  
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 McAllum, Stewart.  
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 Macdonald, G. B. Douglas.  
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 Mackenzie, William L.  
 Mackie, George.  
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 Miller, R. H.  
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 Murison, Cecil C.  
 Murison, T. D.  
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 Nairn, Robert.  
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 Nixon, John Clarke.  
 Nolan, Michael James.  
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 Oldershaw, G. F.  
 Orr, David.  
 Orr, James.  
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 Patterson, Arthur Edward.  
 Patton, Walter S.  
 Paul, William Moncrief.  
 Peachell, G. E.  
 Pearce, Francis H.  
 Pearce, Walter.



- Penfold, William James.  
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 12 Phillips, J. G. Porter.  
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 Pilkington, Frederick W.  
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 Pring, Horace Reginald.  
 Rainy, Harry, M.A.  
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 Rigden, Alan.  
 Ritchie, Thomas Morton.  
 Rivers, W. H. R.  
 Roberts, Ernest T.  
 Robertson, G. D.  
 3 Robertson, G. M.  
 Robson, Francis Wm. Hope.  
 Rorie, George A.  
 Rose, Andrew.  
 Ross, Donald.  
 Rowand, Andrew.  
 Rudall, James Ferdinand.  
 Rust, James.  
 Rust, Montague.  
 10 Rutherford, J. M.  
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 Scott, F. Riddle.  
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 Scott, J. Walter.  
 Scott, William T.  
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 Sheen, Alfred W.  
 Simpson, John.  
 Simpson, Samuel.  
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 Skeen, George.  
 Skeen, James H.  
 Slater, William Arnison.  
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 Steel, John.  
 Stephen, George.  
 Stewart, William Day.  
 Stoddart, John.  
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 Strangman, Lucia.  
 Strong, D. R. T.  
 Stuart, William James.  
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 14 Thomas, W. Rees.  
 Thompson, A. D.  
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 Thomson, George Felix.  
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 Wilson, James.  
 Wilson, John T.  
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 Yeates, Thomas.  
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- 1 To whom the Gaskell Prize (1887) was awarded.  
 2 To whom the Gaskell Prize (1889) was awarded.  
 3 To whom the Gaskell Prize (1890) was awarded.  
 4 To whom the Gaskell Prize (1892) was awarded.  
 5 To whom the Gaskell Prize (1895) was awarded.  
 6 To whom the Gaskell Prize (1896) was awarded.  
 7 To whom the Gaskell Prize (1897) was awarded.  
 8 To whom the Gaskell Prize (1900) was awarded.  
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 10 To whom the Gaskell Prize (1906) was awarded.  
 11 To whom the Gaskell Prize (1909) was awarded.  
 12 To whom the Gaskell Prize (1911) was awarded.  
 13 To whom the Gaskell Prize (1912) was awarded.  
 14 To whom the Gaskell Prize (1913) was awarded.



## ANNUAL SUBSCRIPTIONS.

The Auditors in their Report to the last Annual Meeting felt bound to express their regret at the amount which had to be written off for non-payment of Subscriptions, and at the very large sum which was outstanding on account of Subscriptions in arrear at the end of the year.

In the discussion which followed, the suggestion was made that the Editors should call the special attention of members to the Report, and we now venture to do so. (See *J. M. S.*, October, 1913, page 682.)

At our request the Honorary Treasurer has kindly supplied us with the following statement of arrears :

Unpaid Subscriptions on December 31st, 1913—

For one year	.	.	71.
„ two years	.	.	42.
„ three years	.	.	15.

Those due for three years, amounting to £47 5s., must be written off. The loss to the Association is, we understand, yearly increasing, and the past year shows a marked increase over any preceding year.

If the suggestion, that members should give an authority to their Bankers to pay their Subscriptions, were acted on, much of this loss would not be incurred, and there would be a considerable and most welcome diminution in the Honorary Treasurer's work.

In future, the envelopes enclosing the reminders that Subscriptions are overdue will have printed on them a notice that they are to be returned if not delivered. Amongst Asylum Medical Officers the former colleagues of a member, who has left a particular asylum, can be helpful in forwarding the reminder if the address is known, or in returning it if unknown. In the latter case the expense to the Association would be lessened, as the printers would be instructed to cease sending the Journal.

THE EDITORS.

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Part I.—Original Articles.

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*The Morison Lectures, 1913.—The Serum and Cerebro-spinal Fluid Reactions and Signs of General Paralysis.* By GEORGE M. ROBERTSON, M.D., F.R.C.P.Ed., Physician-Superintendent, Royal Asylum, Morningside, and Lecturer on Mental Diseases, University of Edinburgh.

It is sometimes cast up as a reproach to those engaged in psychiatry that zeal in research, and progress in knowledge in this subject have not kept pace with other departments of medicine, but I now describe some valuable additions to our knowledge which have all been made during the last decade on the diagnostic signs of general paralysis of the insane. Although the full title of this disease is a perpetual reminder of the fact that the credit of its discovery belongs to physicians engaged in asylum practice, it is desirable to drop the final qualification, and refer to it simply as general paralysis.

*Discovery of General Paralysis.*

It is not generally known that this disease has been recognised as a separate entity for less than a hundred years. It was not till 1822 that Bayle asserted that certain "paralytic symptoms complicating insanity" which Esquirol and his pupils had observed for seventeen years were due to a definite disease,

passing through three stages, to which he gave the name of chronic arachnitis—in many respects the most important observation that has ever been made in psychological medicine.

Burrows, writing six years after Bayle, stated that the number of cases of “paralysis complicating insanity” was comparatively trivial, and remarked on the singular discrepancy in respect to its prevalence in France and England. To this Esquirol retorted that when he was better able to distinguish the symptoms he would find as many cases of the disease in London as there were in Paris, the correctness of which surmise was supported by the clinical experience of Sir Alexander Morison. Writing in 1840 in his classical work on the physiognomy of mental diseases, he stated that it was well known at Bethlem Hospital, and he gave illustrations of several of his patients there.

#### *The Syphilitic Hypothesis.*

Esmarch and Jessen in 1857, and Kjelberg in 1863, expressed the opinion that syphilis was invariably the cause of general paralysis. This view received a chilly reception from Griesinger, then the greatest psychiatric authority on the continent, who described it as “a very improbable assumption,” and it passed into obscurity. The facts were brought to light again by Fournier, nearly a generation afterwards. He had suggested in 1875 that locomotor ataxia, a disease described about twenty years previously, was syphilitic in origin, but like the similar suggestion regarding general paralysis, this was received with scepticism by authorities like Erb and Westphal. Fournier, however, maintained his opinion, and in a few years brought forward more statistics of a nature that convinced most of his former opponents. During these inquiries into the causation of locomotor ataxia, he found that general paralysis ran a parallel course with it ætiologically. Fournier’s special views were summarised by him in his work on parasyphilis in 1894, and these were that general paralysis was syphilitic in origin, but not in nature, as it was unaffected by anti-syphilitic remedies, and its lesions were not circumscribed, but diffuse.

The discovery of the specific organism of syphilis, the *Spirochæta pallida*, was made by Schaudinn in 1905, and in the following year Wassermann, Neisser and Bruch obtained a reaction in the serum of an ape infected with syphilis, now known



as the Wassermann reaction. An interesting point in the application of this test to the human being is the fact that Wassermann and Plaut, firmly convinced of the syphilitic origin of general paralysis, immediately applied the test to the cerebro-spinal fluid of patients suffering from this disease, and obtained a positive reaction. They were under the belief that the spinal fluid, being near the chief seat of the disease, would possibly be more fully charged with the antibodies of syphilis than the blood-serum. It was also believed by them that clear proof of an active syphilitic process in general paralysis had thus been obtained, but with further experience of the reaction doubt has arisen on this point.

The Wassermann reaction in general paralysis is the first of the additions to our knowledge to which I shall refer, and it is not my intention to describe its technique or its chemistry, but its clinical aspects.

#### *The Wassermann Reaction in the Blood-serum.*

In every case in which the clinical symptoms point, however slightly, to general paralysis, blood should be drawn off by venepuncture for the application of the Wassermann reaction, as it is very necessary to exclude the presence of this fatal disease. The operation of venepuncture is simple and is performed as follows :

#### *Venepuncture.*

The most accessible veins to puncture are generally the median basilic and the median cephalic immediately in front of the elbow-joint. These often show up much better in one arm than in the other, but by getting the patient to open and close the hand several times the veins can as a rule be rendered prominent, and the most convenient should be chosen. In fat people with small veins there may be difficulty. Having selected the most suitable vein, lay the arm on a table, fasten a tourniquet or a tight bandage round the upper arm, and wash the skin with a lotion of corrosive sublimate in alcohol, 1 to 500. Steady the vein between the finger and thumb of the left hand, then directing the point of a sterile needle of fairly large bore along the line of the vessel, push it steadily into the vein. If properly performed the blood will at once flow freely and should



be collected in a large test-tube. Allow the blood to flow till the tube is full, then if sufficient has been obtained loosen the tourniquet, withdraw the needle, apply a firm pad over the punctured spot, and fix with a bandage. In a few hours the pad and bandage may be safely removed, and no more oozing should take place. The tube and stopper, for which a plug of cotton-wool may be conveniently used, must, like the needles and everything else employed, be absolutely sterile, and the strictest asepsis must be observed throughout the operation.

The blood should be examined by an expert in the technique of the Wassermann reaction, for the sources of error from imperfect technique and faulty materials are many, and it is exceedingly unsatisfactory to have an unreliable report on a point such as this upon which the diagnosis of a fatal disease may hang.

In general paralysis the serum gives a positive reaction in practically every case. That has been my experience of the test as applied by Dr. Winifred Muirhead in the Laboratory of the Royal Edinburgh Asylum, and her work only confirms the observations of Plaut and many others, including Dr. Ivy Mackenzie who originally instructed her in the technique. When the test was first employed, and before knowledge of some sources of error had been gained, she obtained a small percentage of negative results, most of which were afterwards rectified, but in her last 100 cases she has obtained 99 *per cent.* of positive reactions. In 1 *per cent.* of the cases examined by other reliable workers a negative reaction in the serum has also been obtained, but even in these few cases a positive reaction has sometimes been associated with it in the cerebro-spinal fluid, so that the reactions have not both been negative. In 9 *per cent.* of the sera examined by us the reaction was feeble or partially positive, but these cases were also examined by the delicate and accurate lecithin-cholesterin method of Browning, Cruickshank, and Mackenzie, and were found to give by this process a definite positive reaction.

The statistics available for illustrating percentage results are unsatisfactory because the early ones erred on the side of giving too low a percentage of positive reactions. Thus, Plaut, working with Wassermann himself, obtained only 78 *per cent.* of positive reactions in the first 41 cases he examined (Browning and Mackenzie). Three years later he reports that he got 100

*per cent.* or a positive reaction in every case out of 156 examined (Plaut, p. 49), and he accordingly committed himself to the belief "that the serum in paresis always reacts positively." It would, however, appear that one of the next 44 cases examined by him unexpectedly gave a negative reaction, for it is recorded that of 200 cases examined in Kraepelin's clinique, he found a positive reaction in 99.5 *per cent.* (Browning and Mackenzie). Adding together the numbers examined by selected observers who have each dealt with at least 50 cases, namely, Ross and Neve 131 cases, Lesser 62, Plaut 200, Glasgow District Asylum, Gartloch, 94, and Dr. Muirhead, Royal Edinburgh Asylum, 100, we find that out of these 587 cases of general paralysis the blood-serum gave a positive Wassermann reaction in all but 3, or in 99.48 *per cent.*

This power of the serum of giving the Wassermann reaction is so constant a sign that its absence in a case is very strong evidence indeed that general paralysis is not present. It, however, just falls short of being absolute proof of this, for we have already stated that in 1 *per cent.* of the cases examined by experienced workers the reaction has not been obtained. It should be added that our failure occurred in a case in which the symptoms were stationary and which had lasted twelve years.

On the other hand, if the reaction be present the error must not be made of concluding that the patient suffers from general paralysis. Of itself it proves nothing more than that the patient has been, and still is, infected with syphilis. If found associated with the clinical symptoms of general paralysis, it is, of course, a most sinister combination, without, however, being conclusive of the presence of that disease.

It is interesting to note that the Wassermann reaction is present in the blood-serum of general paralysis more constantly and in greater intensity than in any form of active syphilis with the exception of acute secondary syphilis, and even here a positive reaction is not obtained more frequently. The significance of this fact, of course, depends on the exact interpretation that is placed on the Wassermann reaction, and that problem has not been settled. If it is not in the strict sense a specific sign of syphilis, it is at least so closely associated with it clinically that it is very strong empirical evidence of active syphilis in general paralysis.

*Wassermann Reaction in the Cerebro-spinal Fluid.*

In order to test the Wassermann and other reactions in the cerebro-spinal fluid it has to be drawn off by lumbar puncture. This operation was first proposed by Corning of New York, in 1885, and it was in 1891 that Quincke demonstrated its usefulness as a means of diagnosis, but we are mainly indebted to Widal and his associates for its extensive employment in neurology. It is performed as follows :

*Lumbar Puncture.*

A special hollow needle, about 4 in. long, made of platinum-iridium is required, as a steel needle might break across if caught between the vertebræ owing to the patient moving. The point of the needle should be very sharp, as the dura mater is tough, and it should be absolutely sterile. Several test-tubes, also sterile, are required to catch the fluid.

The patient, if weak, may lie on his side at the edge of the bed with his knees flexed on his abdomen and his shoulders raised. It is much more convenient to perform the operation with the patient seated on a stool, stooping and arching the back, to render the spines of the vertebræ prominent, and to separate the laminæ as much as possible. The skin of his back over the lumbar vertebræ is prepared by scrubbing it with a solution of corrosive sublimate in alcohol, one in 500.

An imaginary line is now drawn joining the highest points of the iliac crests, and this crosses the middle line over the spine of the fourth lumbar vertebra. The thumb of the left hand can now be placed in the interval between the fourth and fifth spines to mark the level of the site of the puncture, which is half an inch to one side of the middle line. If ethyl chloride be sprayed over this point or cocaine injected, it not only lessens the discomfort of the patient, but in effecting this materially assists the operation. The needle should be plunged boldly in, directed slightly upwards and inwards for a distance of about  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in., depending on the patient's condition. If the needle strikes against bone it need be withdrawn only a little, manipulated, and again pushed forward.

As soon as the needle has penetrated the meninges, which can be felt, the fluid should flow readily. The first few drops

are usually blood-stained and should be rejected and allowed to flow into a separate tube, and the collection for examination purposes made of clear fluid only. When about 5 to 7½ c.c. have been collected the needle should be quickly withdrawn and a little collodion applied over the puncture. The test-tube should be plugged with sterilised wool.

It is advisable to keep the patient in bed for the rest of the day or for some hours at least after drawing off the fluid in order to prevent headache or sickness from occurring. If the fluid does not flow owing to a plug of skin or membrane the needle should be twisted round, and if this be unsuccessful it is safer to withdraw the needle and insert another in the space between the third and fourth or second and third lumbar vertebræ. Very rarely, owing to an obliteration of the sub-arachnoid space, fluid cannot be obtained.

The cerebro-spinal fluid in general paralysis almost always gives a positive Wassermann reaction, and in this important respect it differs from active syphilis, in which the reaction is negative. The only exceptions to the latter statement are a certain proportion of cases of syphilis involving the nervous system, and the twin sister of general paralysis, tabes. Unlike the positive reaction of the blood-serum, this reaction is characteristic and distinctive of general paralysis, but not exclusively so. At some stage or other of every case of syphilis which ultimately develops into general paralysis, during the interval between the infection and the appearance of the clinical symptoms of general paralysis, the reaction of the cerebro-spinal fluid changes from negative to positive. It would be a most instructive research to follow this change and the associated symptoms, but this has not yet been done. We do know, however, that in every case of general paralysis, however early it may be examined, or however slight the symptoms may be, a positive reaction is nearly always obtained.

Out of 100 cases of general paralysis examined at the Royal Edinburgh Asylum and in my private practice, 95 *per cent.* gave a positive Wassermann reaction in the cerebro-spinal fluid. The percentage is thus less than that obtained in the serum. In 13 *per cent.* of the cases examined the fluid gave a feeble or partially positive reaction, and these were also examined by the lecithin - cholesterin method of Browning, Cruickshank, and Mackenzie, and in every instance gave a definitely positive



reaction. Plaut obtained a positive reaction in 144 out of 150 specimens of spinal fluid, or a percentage of 96 as contrasted with the 99.5 *per cent.* of positive reactions obtained by him in the blood-serum. Of 618 cases of general paralysis examined by the ten following selected observers, a positive reaction was obtained in the cerebro-spinal fluid in 582, or 94 *per cent.* of the cases:

*Percentage of Positive Wassermann Reactions of the Cerebro-spinal Fluid in General Paralysis.*

Observers.	Number of cases.	Positive reaction.	Per cent.
1. Nonne and Holzmann . . . . .	23	22	95
2. Eichelberg . . . . .	61	57	93
3. Smith and Candler . . . . .	64	59	92
4. Marinesco . . . . .	35	32	91
5. Plaut . . . . .	150	144	96
6. Marie, Levaditi and Yamano- nouchi . . . . .	30	28	93
7. Stertz, Morgenroth and Stertz	53	48	90
8. Raviart, Breton and Petit . .	72	67	93
9. Morton . . . . .	30	30	100
10. Muirhead, Royal Edinburgh Asylum . . . . .	100	95	95
	<hr/> 618	<hr/> 582	<hr/> 94

*Note.*—1 to 5 quoted from Mackintosh and Fildes, 6 to 8 from Plaut, and 9 from Browning and Mackenzie.

If these results be not quite so high as the percentage of positive reactions obtained from the blood-serum, they are, nevertheless, remarkable for so distinctive a sign, and at least two causes, which may in time be eliminated, have combined to lower these results. There have been, for example, errors of technique, for when some of these observations were made it was not realised that the reacting substances were in more dilute solution in the spinal fluid than in the serum, and that it was necessary to use a larger quantity of spinal fluid than of serum. In the next place it is probable that some of the cases which failed to give a reaction were not cases of general paralysis at all. Some of these cases are still living, and the diagnosis will have to be confirmed by histo-



logical examination when they die. Others have died, and *post-mortem* examinations have been refused, so that the diagnosis could not be verified. In all these cases a diagnosis was made on clinical grounds, and we know that mistakes are frequent if these alone be relied upon. It was found, for example, after death that there were three cases of mistaken diagnosis in the first batch of fifty-four cases of supposed general paralysis whose sera were examined by Plaut. As all the six cases out of 150 in which he failed to get a positive reaction in the spinal fluid are exceptional cases, which do not conform to the ordinary clinical types of general paralysis, it is possible that some have been wrongly diagnosed, and may ultimately prove to be cases of syphilis of the nervous system.

Plaut has expressed the opinion that a positive reaction in the cerebro-spinal fluid may yet be found in every case and prove to be the diagnostic sign of general paralysis. Our experience is contradictory of this opinion, for of the five cases in which a negative reaction was obtained by us, the diagnosis was confirmed by *post-mortem* appearances in one and by histological examination in other three. The spinal fluid of these three cases was examined many times and always with negative results, although large quantities of fluid were used. The delicate lecithin-cholesterin method of Browning, Cruickshank and Mackenzie was also tried in vain. In 4 to 6 *per cent.*, therefore, of cases of undoubted general paralysis, the Wassermann reaction in the cerebro-spinal fluid may be negative.

Ever since it has been shown that the reacting substance in the spinal fluid was of a fatty or lipid nature and that possibly it was not a specific antibody of syphilis, it has been suggested that its source was degenerating nerve-cell and nerve-fibre, which are particularly rich in fatty substances. Certainly the most marked anatomical change in general paralysis is the extraordinary wasting of brain-tissue that occurs, sometimes amounting to a loss of one-third of its weight, and the possibility of this suggestion cannot be denied.

### *Signs of "Chronic Arachnitis."*

Bayle, the original discoverer of general paralysis, called the disease "chronic arachnitis," and by examining the cerebro-spinal fluid obtained by lumbar puncture, microscopically and

chemically, it is possible during life to demonstrate the sign of this chronic meningitis to which he attached such importance. These signs are an increase in the number of cells, an increase of globulin and the presence of albumen.

*Increased Number of Cells in the Cerebro-spinal Fluid; Widal's Rough Method of Enumeration.*

As a result of the chronic meningitis which is invariably present in general paralysis, the number of free cells in the cerebro-spinal fluid is almost always much increased. The simplest method of testing for this increase is known as Widal's rough method. Five c.c. of cerebro-spinal fluid are placed in centrifuge for five minutes. The supernatant fluid is now gently decanted and the bottom of the inverted tube is scraped with a fine pipette to collect the sediment. This is now blown on to a cover-glass, fixed and stained with methylene blue, Jenner's or Leishman's stains. With a magnification of 400 diameters the normal fluid should not show on an average more than two or three cells to the field, and there may be none present. In general paralysis, on the other hand, the lymphocytes are almost always markedly increased and the specimens show on an average ten, twenty, or more cells in the field. This rough method has the great advantage of being very easily applied, and in the great majority of cases it is sufficiently accurate and supplies the information desired.

*Fuchs-Rosenthal Counting-chamber Method.*

Scientific accuracy of enumeration, which is needed in doubtful cases, can only be obtained by a counting-chamber method. This method requires the employment of a special cell constructed by Zeiss, and for ease of counting, the cell is divided into sixteen sets of sixteen small squares. A Zeiss W.B.C. pipette is used for mixing the fluids, and as a diluent 1 part methyl violet, 2 parts glacial acetic, and 50 parts of distilled water are recommended. The diluent is drawn up to mark 1, fresh uncentrifuged spinal fluid up to mark 2, and the mixed fluids are thoroughly shaken for five minutes. After discarding the first two or three drops one drop is placed on the slide and all the cells are counted inside the chamber.

This count is repeated with a second drop, and the average obtained. This number is now divided by three, and the result gives the number of cells per c.mm. in the cerebro-spinal fluid. In the normal fluid not more than five cells in the c.mm. are seen, whereas in general paralysis any number from 10 up to 100 or more per c.mm. may be counted. In a few cases, chiefly of stationary general paralysis and in cases with slight symptoms, but also in my experience in acute cases, the number of cells may be increased so slightly that the cell-count is only between 6 and 10 per c.mm. In one case only in the Royal Edinburgh Asylum out of 100, of a very chronic and quiet type, was it below normal, or 5 cells per c.mm. These cases with low enumerations do not occur oftener than once in ten, so that in about 90 *per cent.* of cases of general paralysis there is a well-marked lymphocytosis of the cerebro-spinal fluid. It sometimes happens that the fluid from the first, and even the second, puncture may give a negative cell-count, and therefore in doubtful cases with a negative count the examination of the fluid should be repeated. These varying samples of spinal fluid may be due to meningeal pockets, but it is also found that during the course of general paralysis the cell-count varies from time to time, without any relationship to treatment or the acuteness of the symptoms.

This lymphocytosis of the spinal fluid is not pathognomonic of general paralysis, as it occurs occasionally in epilepsy and dementia præcox, and it is possibly a sign of syphilis. It is found in the secondary stage of syphilis, and this early mild meningitis, of which headache may be the only symptom, is a more constant and perhaps a more important symptom than has yet been realised by syphilologists and neurologists. It is not infrequently found in persons suffering from tertiary symptoms not relating to the nervous system, and also in latent syphilis presenting no symptoms whatsoever, save the presence of the Wassermann reaction in the blood. In meningeal and gummatous lesions of the nervous system it is, of course, very marked, and a much higher count is usually obtained than the usual number for general paralysis, which seldom exceeds 100 per c.mm.

It is important to know whether there is any causal connection or association between the presence of a persistent lymphocytosis in the spinal fluid and the subsequent develop-

ment of general paralysis and tabes, in view of the constant presence of chronic meningitis in these diseases. It is possible that these persons may have, since the time of their secondary symptoms, presented the sign of a persistent lymphocytosis of the spinal fluid. If such a connection were established, vigorous prophylactic measures would be adopted at a very early stage. It is possible, on the other hand, that the original mild meningitis may die down and disappear, only to flare up suddenly after some years in those cases which develop general paralysis. It has also to be remembered that in nearly 10 *per cent.* of the cases of general paralysis there is no marked lymphocytosis.

*Differential Examination and the Presence of Plasma-cells.*

An additional aid to accuracy of diagnosis is supplied by the differential examination of the cells in the spinal fluid. The best method devised for this purpose is that of Alzheimer, the technique of which is not difficult. It consists of centrifuging 3 or 4 c.c. of the cerebro-spinal fluid with double the quantity of 96 *per cent.* alcohol for from half to one hour, depending on the speed of the centrifuge, and by this means the proteid is coagulated into a hardened plug. It is then still further dehydrated and hardened by means of pouring on absolute alcohol, then equal quantities of alcohol and ether, and finally ether for a variable number of hours, depending on the thickness of the plug. The plug is next loosened from the side of the tube by a fine flattened needle, embedded in celloidin, and cut in sections of 15 micro-millimetres in thickness. The cut sections may be stained by Pappenheim's pyronin-methyl green, or with Unna's polychrome methylene-blue.

From the researches of Dr. D. K. Henderson and Dr. Winifred Muirhead in the laboratory of the Royal Edinburgh Asylum, it would appear that there are four varieties of cell normally present in the cerebro-spinal fluid, and all of these are found in general paralysis. These were lymphocytes, mononuclear leucocytes, polymorphonuclear leucocytes and endothelial cells, the lymphocytes predominating as they do normally. The proportions are shown in the following table, with similar observations, for purposes of comparison, in dementia præcox; these may be provisionally accepted as



representing the normal. The average cell-count per c.mm. in twenty-six cases of general paralysis was 47, and in eleven cases of dementia præcox it was only 1·3 per c.mm.

*Differential Cell-Count in Spinal Fluid in Percentage of Total Cells.*

	General paralysis.				Dementia præcox.		
	Min.	Max.	Average.		Min.	Max.	Average.
Lymphocytes . . .	52	84	72·2	.	59	78	70
Mononuclear . . .	7	40·6	16	.	21	40	28·6
Polymorphonuclear .	·3	16	3·5	.	0	4	·9
Endothelial . . .	0	3	·8	.	0	2	·4
Plasma . . .	1·5	16	6	.	0	0	0
Gitter or lattice . .	0	1·6	·5	.	0	0	0

Cotton and Ayer's results in nineteen cases of general paralysis were as follows: Lymphocytes, 73 *per cent.*; endothelial, 13 *per cent.*; polymorphonuclear, 9 *per cent.*; plasma, 2 *per cent.*; phagocytes, 1 *per cent.*; and unclassified cells, 2 *per cent.*

The differential cell-count in general paralysis is subject to more extreme fluctuations than in other psychoses; the average percentage of mononuclear leucocytes is distinctly low, and the percentage of polymorphonuclear leucocytes and endothelial cells is high, and is sometimes very high.

*Plasma- and Lattice-Cells.*

The most characteristic cell in the spinal fluid in general paralysis is the plasma-cell, and it is one which is not normally present. It is always present in general paralysis, and it varies from 1·5 *per cent.* to 16 *per cent.*, the average being 6 *per cent.* It is also found in smaller numbers in tabes and in cases of cerebral syphilis, but it is not peculiar to these conditions, for it and the other cells to be mentioned are also found in tubercular meningitis.

Another cell as characteristic of general paralysis as the plasma-cell is the gitter or lattice-cell, so called from the lattice-like effect produced by vacuolation of its protoplasm. It is frequently not seen, but on other occasions it may form 1·6 *per cent.* of the cells present, the average being ·5 *per cent.* These cells and the mononuclear cells (1·5 *per cent.* of the total) may



be phagocytic, and may be found containing one or two strange nuclei which they have enveloped.

Two other types of cells—transitional cells and fibroblasts—are also occasionally found in the cerebro-spinal fluid in general paralysis.

It is interesting to note that although the total cell-count in exceptional cases may be low, and not much more than normal, the varied character of the cells in general paralysis is in our experience always adhered to, and plasma-cells are always to be found if a thorough search be made for them.

#### *An Excess of Globulin.*

A certain amount of globulin is normally present in the cerebro-spinal fluid, but the amount is greatly increased in general paralysis. Noguchi has devised a reliable test for demonstrating its presence, but the best clinical test for it is what is known as the Ross-Jones test. It is as easy of application as the nitric acid test for the presence of albumen in the urine. An inch of a saturated solution of ammonium sulphate is poured into a test-tube, and over the surface of this cerebro-spinal fluid is carefully allowed to trickle from a pipette. At the line of junction of the two fluids a very definite white line of precipitate forms if globulin be present in excess, very similar to the line produced in urine when there is albumen present. There is usually no doubt whatsoever about the presence of this line when the test is positive, but if any doubt exists it can be at once dispelled by diluting the cerebro-spinal fluid with a half of its bulk of distilled water before applying the test. If any line be now visible at all after this dilution, the reaction must be regarded as strongly positive. This reaction, in our experience, is always present in general paralysis, but Noguchi and other reliable workers have found it to fail in 2 or 3 *per cent.* of cases. A slight and transitory excess of globulin may be found in acute forms of insanity, such as delirious insanity, epileptic insanity, and dementia præcox. It is found in syphilis of the nervous system, but contrary to what is the case with lymphocytosis, it is less intense than in general paralysis. Excess of globulin alone in a person who has not had syphilis will not give a positive Wassermann reaction, although the substance which produces the reaction in general paralysis is united to the globulin molecule, and is precipitated with it.

*The Presence of Albumen and its Amount.*

The constant presence of albumen in the cerebro-spinal fluid of general paralysis can be demonstrated by the nitric acid reaction, and the test is of use as it is not present in the normal fluid. Its value is greatly enhanced as a diagnostic sign if a quantitative estimation be made, and this can be conveniently done by means of Aufrecht's albuminimeter. Four c.c. of spinal fluid are mixed with 3 c.c. of the reagent, which consists of a mixture of equal parts of 5 *per cent.* picric acid and 3 *per cent.* citric acid. The mixture of the reagent and the spinal fluid is placed in a graduated Aufrecht tube and centrifuged for five minutes at 2000 revolutions. The albuminous contents are precipitated and read off in terms of percentage on the scale. The normal proteid content is always less than '05 *per cent.*, whereas in general paralysis it is always increased three or four times in amount and varies from '1 *per cent.* upwards. There may also be an increase in other forms of acute insanity, but in them it never exceeds '1 *per cent.*, whereas in general paralysis it is never below that figure. In these other forms of insanity, albumen or globulin may be present singly, but they do not constantly appear together nor in the same amount as in general paralysis. In acute meningitis the amount of albumen present is of course much in excess of that ever found in general paralysis.

*Summary.*

These six reactions and signs of general paralysis are independent of one another in origin, and different in nature, so they supplement and confirm one another. The Wassermann reaction of the blood-serum is independent of the reaction in the spinal fluid, and this is apparent from the fact that in ordinary syphilis the former is positive and the latter negative. The converse has been occasionally met in general paralysis, but not infrequently the reaction has been found much stronger in the spinal fluid than in the blood. Similarly there is no connection between lymphocytosis or the excess of globulin and the Wassermann reaction, although the lipoid reacting substance if present is precipitated with the globulin. Nor is there any essential relationship between the presence of globulin and

of albumen, or of lymphocytosis and the presence of plasma-cells.

A combination of independent signs of this kind increases their value enormously for diagnostic purposes, and if, as usually happens in general paralysis, all the signs are positive, their cumulative effect on the diagnosis is irresistible. Should one sign fail, owing to an unusual circumstance, the other signs will almost certainly indicate the fact if general paralysis be present. If all fail, then the case cannot be considered one of general paralysis.

The signs which may occasionally fail are the Wassermann reaction in the cerebro-spinal fluid in 6 *per cent.*, in the blood-serum in 1 *per cent.*, and a definite lymphocytosis in 10 *per cent.* of the cases. Any one of these may fail singly, and a diagnosis of general paralysis may be correctly made, provided all the other signs are positive and the clinical symptoms are typical.

The three minor signs—the increase of globulin, the presence of albumen and of plasma-cells—very rarely fail in general paralysis, so they are valuable for the purpose of confirming the evidence of the three major signs, especially in those cases in which there is a failure of one of them. They also confirm a diagnosis made on clinical grounds, when it has not been possible to perform the Wassermann reaction.

The *paramount sign* is undoubtedly the presence of the Wassermann reaction in the cerebro-spinal fluid, for it is shared by only two other conditions, and these allied to general paralysis, namely, by its twin sister, tabes, and its first cousin cerebro-spinal syphilis. If these two conditions can be excluded by the clinical symptoms, the diagnosis of general paralysis may be made even in the absence of the other two major signs—lymphocytosis, and the Wassermann reaction in the blood.

It is important to know, from a diagnostic point of view, that ordinary doses of salvarsan have only a slight and temporary effect in altering these reactions and signs in general paralysis, and this only in about half of the cases. The intensity of the Wassermann reaction may be decreased, or it may occasionally become negative for a time, and the cell-count may be lowered. In cerebro-spinal syphilis, on the other hand, the effect of salvarsan is very different, and is so marked as to form an important diagnostic feature. The excess of globulin quickly

disappears, the cell-count, from being very high, becomes markedly reduced to nearly normal, and the Wassermann reaction usually becomes negative in the cerebro-spinal fluid and may also become negative in the serum.

As a consequence of the discovery of these new reactions and signs we have attained to an accuracy in the diagnosis of general paralysis unapproached in the past, and not excelled in the case of any other disease as important. There are few departments of clinical medicine in which, during the last ten years, more valuable additions to our knowledge have been made.

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*Vaccine Treatment in Asylums.* By W. FORD ROBERTSON,  
M.D., Pathologist to the Scottish Asylums.

THE treatment of bacterial diseases by means of specific vaccines is a branch of therapeutics that has been steadily growing in importance in recent years. It is now being applied to every bacterial infective malady, from acne to acute septicæmia. Nevertheless, it is admittedly only at an early stage in its development. Every worker at the subject is still endeavouring by observation and experiment to improve its methods, to understand better its mode of operation, and to determine the extent of its useful application. It has already had brilliant triumphs, although, in common with other forms of medical treatment, it has to admit many failures. While it is now being extensively employed both in general and in hospital practice, it has not yet been utilised in our asylums as it deserves to be. The chief purpose of this paper is to endeavour to show some of the useful applications vaccine therapy may have in such institutions, and to encourage its employment.

It must be admitted that as a direct means of combating the known causes of insanity vaccine therapy has as yet a very limited utility. Its present importance in relation to the inmates of asylums lies mainly in the fact that these patients, in common with others, not infrequently suffer from chronic bacterial infections of a kind now being successfully treated by means of vaccines. At the same time, I think experience has already proved that in asylum cases the successful treatment of these maladies of bacterial origin by vaccine methods often



results in surprising amelioration of the patient's mental condition. The time has certainly come when asylum physicians should be making and comparing observations. I am well aware that a number have already been made. The subject is not polemical, but one in regard to which we may all benefit by hearing of the experience of others.

The first requisite in specific vaccine treatment is an accurate bacteriological diagnosis. This requires on the part of the worker a thorough knowledge of practical bacteriology, and much experience in the investigation of cases. To arrive at a correct bacteriological diagnosis is in some instances a comparatively easy matter, as, for example, when the case is one of boils from which a pure growth of the *Staphylococcus pyogenes aureus* happens to be obtained. Other cases present special difficulties, and it may be necessary to apply delicate laboratory tests to the patient's blood before evidence can be obtained that justifies therapeutic immunisation against a particular bacterium that has been isolated. Having arrived at a satisfactory bacteriological diagnosis, and having determined that the patient is a suitable subject for vaccine treatment, we have next to prepare the vaccine. In some instance we can resort to the use of stock vaccines, of which there are now several makers. It is, however, very clearly proved that vaccines prepared from the micro-organisms isolated from the patient, or autogenous vaccines, are more effective. In many instances the preparation of an autogenous vaccine is essential, as stock vaccines of the required kind are not obtainable.

Various ways of preparing vaccines have been recommended, differing chiefly with regard to the method of estimating the dose and the means used to secure sterilisation of the cultures. Until lately it was the almost universal custom to estimate the dose in millions of bacteria contained in the vaccine emulsion. Gravimetric methods are, however, now being advocated by several workers. They certainly present great advantages and I would strongly advise their adoption. I shall describe the gravimetric method I have used for more than a year, as well as other details of technique I have worked out, which differ from those commonly employed.

Any form of culture may be used, but I always endeavour to grow the bacteria either on human blood agar, prepared by Allen's method, or in a lactose broth containing human blood-



serum. The blood-serum should, if possible, be that of the patient, but it is rarely practicable to obtain it. After incubation for a sufficient time the culture is centrifuged for ten minutes, or for as long as may be required to throw all of the solid particles to the bottom of the glass tube. The clear fluid is then thrown away, and the tube is allowed to drain for a few minutes over a piece of filter-paper that has been sterilised by heat. The glass tube containing the bacterial deposit is next loosely covered with a sterilised paper cap, and placed in the ordinary bacteriological incubator. On the following morning, when the deposit is dry, the tube is placed on the pan of a chemical balance, and exactly counterpoised with sand. The tube is then removed, and 2 c.c. of  $\frac{1}{4}$  or 1 *per cent.* carbolic acid in normal salt solution are poured into it. By means of a sterile glass rod with rounded end the deposit is ground up until a fine emulsion is formed. This emulsion is next poured into a sterilised test-tube, which must have a cotton-wool plug. The centrifuge tube is then carefully dried, either over the flame of a Bunsen burner or, better, over a hot metal plate; it must not be washed out or cleaned in any way. When the tube is perfectly dry it is again placed in the pan of the chemical balance, to which milligramme weights are added until the indicator rests at zero. The number of milligrammes required gives the weight of solid vaccine contained in the emulsion. The figure is at once written on a label affixed to the test-tube. The emulsion contained in this is now diluted to a convenient strength with carbolic acid solution. Thus, if a streptococcus vaccine is being prepared, and the weight has been found to be 20 mg., 8 c.c. of carbolic acid solution should be added, giving an emulsion of the strength 1 c.c. = 2 mg. The emulsion is now put aside for 24 hours, and then tested for sterility. When found to be sterile the strong emulsion is diluted with  $\frac{1}{4}$  *per cent.* carbolic acid in normal salt solution to the exact strength required. Thus, in the example given, two successive 1 in 10 dilutions will give a vaccine of the strength 1 c.c. = .02 mg., which represents the maximum dose of a vaccine of this kind. In other instances suitable dilutions must be calculated out and made according to the requirements of the case. It is a good rule to have the maximum dose of the solid vaccine contained in 1 c.c. of emulsion. The first emulsion

should be made of a strength exactly 100, or ten times greater than that of the required vaccine. The process of dilution is thus rendered uniform and simple. The vaccine is next decanted into special tubes. These are ordinary specimen tubes of capacity of from 1.5 to 2 c.c. They must be carefully cleaned and sterilised. The most convenient plan is to place the clean specimen-tubes, with open ends down, in large test-tubes of the size "1 × 6," which will generally hold three tiers of them, or from 12 to 15. These large tubes, filled with the small specimen-tubes, are plugged with cotton-wool, and placed in the dry steriliser for three quarters of an hour, at a temperature of 150° C. Supplies of specimen-tubes thus prepared are kept ready for use. A porcelain dish of about 50 c.c. capacity is half filled with hard paraffin and placed in the ring of a retort stand. By means of a Bunsen flame the paraffin is heated until vapours rise. It has then a temperature of from 110° to 120° C. Care must be taken not to allow the temperature to rise very much higher, as a point is soon reached at which the paraffin may take fire. There is also required a small block of wood in which there have been bored a row of twelve shallow holes that will admit and hold the lower ends of the test-tubes. A number of corks of suitable size are placed in the smoking paraffin in order to render them sterile. Twelve sterilised specimen-tubes are carefully removed from the large test-tubes in which they are stored, and without their open ends being handled, are placed, open end up, in the holes in the block of wood. A little more than 1 c.c. of the vaccine is then decanted into each tube. With a pair of small forceps, previously sterilised in the Bunsen flame, a cork is taken from the paraffin, and, after the adherent drop has been shaken from it, inserted firmly into the mouth of one of the tubes. This process is continued until all of the tubes are corked. The stoppered end of each tube is then dipped momentarily in the hot paraffin. The set of vaccines is packed in cotton-wool in a suitable box. On the label should be written the direction, "Shake the tube immediately before opening it," the name of the patient, the number of tubes contained in the set, the nature of the vaccine, its strength, and the range of doses. A scale of doses should also be written out. For example, in the case of a streptococcus vaccine of the strength of 1 c.c. = .02 mg., this might be, arranged in

column,—2 c.c. = '004 mg., 4 c.c. = '008 mg., 5 c.c. = '01 mg., 6 c.c. = '012 mg., 8 c.c. = '016 mg., 1 c.c. = '02 mg. The person who administers the vaccine, who is rarely the one who has prepared it, then has clearly before him the exact necessary data as to the amount of fluid that must be injected in order to give a particular weight of vaccine. I think it is also a good plan to leave a space on the label for a record of the doses given. The tube containing the strong vaccine emulsion should be sealed with paraffin, carefully labelled and stored, in case more vaccines are required. I would add one hint with regard to the technique of injection. I have found a 5 *per cent.* solution of carbolic acid in equal parts of alcohol and ether a very convenient antiseptic for the sterilisation both of the skin and of the syringe. It is rapid in its action, and produces a distinct degree of local anæsthesia. A small amount of the vaccine emulsion serves to wash the antiseptic out of the syringe before the requisite dose is drawn into it.

The range of suitable doses of vaccines prepared from the most commonly occurring pathogenic bacteria, has now been fairly well determined. It is best to begin with a small dose, and, if necessary, gradually to increase it. The first three or four injections should produce a distinct focal reaction, that is to say, signs of an active congestion at the seat of the infection from twelve to twenty-four hours after the vaccine has been given. To this rule there are, however, important exceptions. The degree of malaise produced and the amount of temperature disturbance, both of which should be very slight and transient, are also important guides to dosage. It is now generally considered unnecessary to control the injections by determination of changes in the opsonic index. It is well that it is so, for otherwise vaccine therapy would be much restricted in its usefulness. Some of its greatest triumphs have been obtained by observers who were far too busy to carry out a method that entails so large an expenditure of time.

*Vaccine Doses of Common Pathogenic Organisms.*

Streptococci	}	'002 mg. to '02 mg.
Pneumococci		
Staphylococci	}	'005 mg. to '05 mg.
Coli-typhoid group		
<i>B. influenza</i>		

<i>M. catarrhalis</i> <i>B. septus</i> <i>M. paratetragenus</i> <i>Diplococcus crassus</i> Diphtheroid bacilli	}	.02 to .2 mg.
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The bacteriologist naturally prefers to group the maladies in which vaccine treatment is applicable from his own point of view, which is that of the infection. It will, however, be more convenient, I think, to deal with the matter here from the standpoint of the clinician. I shall attempt only the merest summary which has no pretensions to being exhaustive.

*Diseases of the integumentary system* offer a large field for vaccine treatment. Boils, carbuncles, acne, sycosis, impetigo, chronic ulcers, eczema, scleroderma, and erysipelas are among the maladies that have been attacked by its means. Infections by staphylococci and streptococci are chiefly responsible for the conditions named. Among these organisms are included many distinct species, which can now be differentiated by tests. Acne is believed to be dependent upon the action of two organisms, the *Bacillus acnes* and a staphylococcus. On account of the special difficulty there is in isolating the bacillus it is probably best to use a stock vaccine of this organism and to prepare an autogenous staphylococcus vaccine.

*Diseases of the respiratory system* present a still wider field for the application of vaccine methods of treatment. There first arises here the question of the use of tuberculin and its modifications in cases of pulmonary phthisis. It is remarkable how much difference of opinion still exists regarding this matter. At the present day tuberculin has both its enthusiastic advocates and its convinced opponents. I have no experience of my own from which to form a judgment, but some of the facts and arguments that have lately been adduced seem to me to inculcate the necessity for great caution in the use of this remedy, as, for example, those so clearly stated by Dr. R. W. Allen in a recent paper<sup>(1)</sup>. On the other hand, there can be little doubt as to the value of treating by vaccine methods the secondary infections that are almost constantly associated with pulmonary phthisis. It is to Dr. Allen<sup>(2)</sup> that we are chiefly indebted for our knowledge of this matter. He has thoroughly investigated these secondary or "mixed" infections, as he prefers to call them, of the respiratory tract, and given much excellent guidance



for their specific vaccine treatment. Streptococci, pneumococci, *Micrococcus catarrhalis*, the bacillus of influenza, and *Micrococcus paratetragenus* are the most common infecting agents that occur in association with the tubercle bacillus, but there are also numerous others. A thorough bacteriological examination is necessary in each case, and mixed vaccines are generally required.

The common cold in its several forms is a condition that is eminently suitable for vaccine treatment. As Allen and others have shown, the chief infecting agents are five or six in number, namely, *Micrococcus catarrhalis*, *Bacillus septus*, *Micrococcus paratetragenus*, the bacillus of Friedländer, and the pneumococcus. To these we may add the bacillus of influenza, if the manifestations of its attack are to be included in this category. Streptococci are also important, but it is doubtful if they can be regarded as primary agents in the causation of epidemic respiratory catarrhs. In this class of infections vaccine treatment should be commenced as early as possible, with the object of cutting short the attack. Many practitioners are now using a mixed stock vaccine, prepared from cultures of four or five of the species I have named, and the results appear in most cases to be fairly good. The type of infection can generally be determined in a few minutes by the examination of a suitably stained film of the nasal mucus, or of the sputum, and a better plan is to make such an examination and to treat the case with polyvalent stock vaccines of what appear to be the causal organisms.

Chronic bronchitis and asthma have also been found in many instances to yield to autogenous vaccines. Streptococci, pneumococci and *Micrococcus catarrhalis* are the chief offenders. Even acute pneumonias are now being treated by similar methods. The causal organism may be the pneumococcus, Friedländer's bacillus, the bacillus of influenza, or a streptococcus.

*Infective diseases of the genito-urinary tract* present another important field for vaccine work. There is, for example, cystitis in its acute and chronic forms. In these a colon bacillus is the most common infecting agent, and as it may belong to one or other of several distinct species, an autogenous vaccine is required. Chronic infections of the urinary tract by coliform organisms can rarely be eradicated, but, nevertheless, great benefit results from persistent vaccine treatment. A



suitable dose of autogenous vaccine should be given every ten days. Among other infections of this region, those by the gonococcus, the Gram-positive diplococci, and diphtheroid bacilli all lend themselves to vaccine treatment. Post-partum and post-abortive infections of the uterus have also been successfully treated by autogenous vaccines. These have special importance for us because of their occasional association with puerperal insanity.

*Diseases of the alimentary system* likewise present many opportunities for successful vaccine treatment. The very common morbid condition generally referred to as *pyorrhæa alveolaris*, which entails chronic bacterial poisoning, and which may, therefore, be a cause of various forms of serious ill-health, can at least be benefited by autogenous vaccines, although other measures are almost always necessary in order to eradicate the mischief. The bacterial flora of the ulcerated alveolar margins is usually very complex. As a rule streptococci predominate, and autogenous streptococcus vaccines seem in general to be the most beneficial. Among other organisms to which importance is attached are the pneumococcus and *Micrococcus catarrhalis*. Mixed autogenous vaccines are often required. It may be observed here that many cases of chronic rheumatism are greatly benefited by autogenous streptococcus vaccines when *pyorrhæa alveolaris* is present.

Chronic bacterial infections of the alimentary tract, though certainly very common, are extremely difficult to investigate. In some instances the infecting organism can be isolated from the urine, having passed through the blood-stream and been excreted by the kidneys. There are good grounds for believing that this is the source of some of the diphtheroid organisms that occasionally appear in small numbers in otherwise normal urine. Any bacterium which there are good grounds for believing has thus passed through the blood-stream must be exercising a pathogenic action, and the use of a vaccine prepared from it is fully justified. More information might, I think, be obtained from systematic bacteriological investigation of the stools. A distinct abnormality of the flora, in conjunction with certain clinical symptoms, may occasionally justify special vaccine treatment.

Lastly, I come to the subject of the treatment of *diseases of the nervous system* by means of specific vaccines. In the present

position of knowledge the number of morbid conditions belonging to this category that are capable of being so treated is somewhat limited. They include cerebro-spinal meningitis, some cases of toxic neuritis which have been found to yield to autogenous streptococcus vaccines when there was an accompanying condition of severe pyorrhœa alveolaris, and cases of puerperal insanity in which there is uterine infection by pyogenic organisms. This brief list, however, by no means exhausts the subject. We have in some cases to anticipate and prevent bacterial infections and intoxications of the central nervous system. For example, chronic otitis media always threatens the brain and too often terminates by spread of the infection to the meninges. There is, in such cases, therefore, an important place for autogenous vaccine treatment. Much can certainly be done by such means to control the local infection.

Certain infections of the genito-urinary tract have a very similar relation to diseases of the spinal cord. It has been proved that such infections may spread to the spinal lymphatic system, and that bacterial toxins absorbed from the genito-urinary tract may specially injure the cord. Nevertheless, owing to the almost universal prejudice that leads to the uncritical acceptance of syphilis as the exclusive cause of tabes and general paralysis, in spite of the incompleteness of the evidence, such infections and intoxications are still almost entirely neglected in their relation to chronic diseases of the nervous system. The very existence of their most important forms is generally denied or ignored. I refer especially to the diphtheroid infections that occur so constantly in the genito-urinary tract in cases of tabes and general paralysis, until secondary infections by coliform bacilli or Gram-negative diplococci have displaced the original flora. The organisms in question cannot be included in any of the classifications of diphtheroid bacilli that satisfy eminent authorities at the present day. They differ essentially from *Bacillus xerosis*, *Bacillus Hoffmannii*, and the diphtheria bacillus, as these are usually described. They form a group by themselves, and I have no hesitation in affirming that it is a group as important in pathology as that of the streptococci, the staphylococci, the coliform bacilli, or the Gram-negative diplococci. Like these organisms they are quite common, and like them may occur as harmless saprophytes, or as the agents of fatal infections.

There are probably numerous species, but their identification is at present beset with insuperable obstacles because of their extraordinary polymorphism and variability and the difficulty that there is in growing some of the strains even upon blood media. They have been found in great numbers in the genito-urinary tract under conditions which proved that they were exercising a pathogenic action, not only in general paralysis and tabes, but in exophthalmic goitre, manic-depressive insanity, severe neurasthenia, endometritis, intractable sciatica, and other maladies, and their causal relationship to the illness has been borne out by the success of vaccine treatment in every example I have given, with the exception of general paralysis. The value of such vaccine treatment in early cases of tabes has been proved again and again. It can certainly do what previous anti-syphilitic treatment has failed to accomplish. I am not arguing against the importance of syphilis in general paralysis and tabes, but only against the prejudice that has led to the universal acceptance of syphilis as the sole cause of these diseases, and to the general neglect of the infections to which I refer. It ought to be recognised that there must be other essential factors that are not yet fully understood. Some recent observations tend strongly to support the opinion that these other factors consist in the occurrence of certain bacterial infections at mucous surfaces, which influence the character of the syphilitic malady and determine the occurrence of the paralytic process. Evidence of this kind has recently been brought forward in France, and I have myself observed many otherwise puzzling facts that would be explained by such a relationship. If this view of the part played by bacterial infections in the ætiology of general paralysis and tabes is borne out by future research, then these diseases must be attacked by combined anti-syphilitic and bacterial vaccine treatment. In this connection the almost constant occurrence of diphtheroid organisms of the special kind to which I have alluded in chronic intractable syphilitic ulcers and sinuses is of considerable significance. The bacillary products would appear to be exercising some stimulating or protecting influence upon the spirochætes. Fleet-surgeon Kilroy<sup>(3)</sup> has described some lesions of this kind which failed to yield to salvarsan or mercury, but which were speedily cured by subsequent auto-genous vaccine treatment. Such results, taken in conjunction

with other well-established facts, seem to me to warrant the trial of a similar combined treatment in general paralysis and tabes.

Dementia præcox with its multiplicity of bacterial infections might be thought to offer a splendid field for vaccine therapeutics. I have tried various autogenous vaccines without the slightest effect upon the course of the malady.

Acute toxic insanities should form an important field for successful vaccine treatment, but the matter still requires investigation. At present puerperal insanity is the chief member of the group that lends itself to such a therapeutic measure.

Cases of manic-depressive insanity are also open for investigation with the object of ascertaining if any infective conditions exist that can be treated by vaccines. From evidence already obtained, I believe that the occurrence of some such infection can be demonstrated in a large proportion of cases. In people with special hereditary predisposition common bacterial infections may serve to disturb the metabolism of the cortical nerve-cells, and therefore vaccine treatment of such infections in manic-depressive cases will generally be well worth undertaking. Apart altogether from cases of insanity, experience has shown that the ætiology of many different forms of obscure illness can be cleared up by a systematic bacteriological investigation. It is very probable that the application of similar methods of investigation to some cases of insanity of obscure ætiology would elicit the fact of a chronic bacterial infection that might be successfully treated by vaccines.

I have, I think, touched upon the main facts that are of moment to those who contemplate the use of vaccines in asylum practice. I maintain that vaccine therapy has now reached a position so secure in its scientific foundations, accurate in its methods, and successful in its results, that it should be systematically employed in our mental hospitals in all cases in which it is applicable.

(<sup>1</sup>) "Some Thoughts on Tuberculin and Tuberculin Therapy," *Journal of Vaccine Therapy*, August, 1913.—(<sup>2</sup>) *Journal of Vaccine Therapy*, 1912-13.—(<sup>3</sup>) *Ibid.*, June, 1913.

#### DISCUSSION,

At the meeting of the Scottish Division in Edinburgh, October 21st, 1913.

Dr. BRUCE said that he had employed vaccines in the general treatment of his patients at Murthly for several years. His method of preparing the vaccines was, however, different to that described; in his own case he standardised the vaccines



by their opacity. He did not think that assistant medical officers should be told to take up vaccine therapy without being warned of the dangers of such methods of treatment: some very unfortunate results had come to his knowledge through the use of vaccines by ignorant or incompetent persons. Vaccines properly prepared and properly used were, in his opinion, very valuable adjuncts to general treatment in asylums. He had found vaccines useful in chronic boils, impetigo contagiosum, chronic nasal catarrh, cystitis, particularly the cystitis which was met with in the depressed stage of *folie-circulaire*, conjunctivitis with blepharitis and chronic sinuses. It was a noticeable feature that patients treated by vaccines gained weight, and he thought that much benefit accrued to certain cases of insanity as the result of any subcutaneous injection, but this stimulation of nutrition was not in any sense a specific action, as similar results were obtained by the injection of sterile distilled water. He thought Dr. Ford Robertson's paper an excellent one, and the idea which prompted it still more excellent, as it added greatly to the interest of work in asylums if some such study as vaccine therapy was seriously taken up by the staff.

Dr. CHALMERS WATSON, called on by the Chairman, remarked that he had listened with great pleasure and profit to Dr. Ford Robertson's paper. He had come to listen and learn, rather than to take part in the discussion. He had little experience of vaccine therapy in connection with mental diseases, but from a fairly extensive experience of vaccine therapy in general medicine he was a confirmed believer in its value as a therapeutic agent. He had found, more especially in some chronic forms of respiratory trouble, particularly asthma and bronchiectasis, striking and unmistakable good results brought about by vaccine therapy. Further, in quite a number of cases of rheumatoid arthritis in which a pathogenic organism was obtained from the urine, or from a latent focus of septic mischief, he had obtained very striking and successful results. He was in cordial agreement with Dr. Bruce in entering a word of caution against the indiscriminate use of vaccines; undoubtedly such use had brought vaccine therapy into some disrepute. This indiscriminate use largely applied to the use of stock vaccines. He practically never used stock vaccines; unless the case under investigation yielded from the urine or other secretions organisms which were probably pathogenic, he did not regard a case as suitable for vaccine treatment. The interest of the public in this subject was now a factor to be reckoned with. Only recently he had been consulted by an English lady suffering from a chronic illness, who had experienced four courses of vaccine treatment. This lady had a remarkable general knowledge of bacteria. The vaccines which had been used in her case included staphylococci, streptococci, and pneumococci, and she talked glibly of the numbers of millions of the different organisms used in the treatment. From her experience of the various vaccines, she had arrived at the conclusion that the injection of "staphylos" and "streptos" had been beneficial, but the addition of the "pneumos" (note the tone of familiarity) had been prejudicial to her. In this, as a matter of fact, she was probably right. In this case vaccination had failed, largely because vaccine therapy had been used as the only method of treatment, no attention being directed to other simple methods of treatment which a careful examination of the case showed to be called for. Vaccine therapy was to be regarded not so much as a specific form of treatment as complementary to other methods. It was, in his opinion, a mistake to regard vaccine therapy as something apart from other methods in the hands of the physician. Most general diseases were the result of a general toxæmia or bacterial infection, and there was a constant struggle taking place between the offending organisms and the patient's blood and tissues. In a large number of cases this toxæmia or infection could be overcome by means which either reduced the pathogenic power of the bacteria at their source, or raised the resisting power of the blood and the various glands which were specially concerned in resistance to infection, and it was only in cases where success could not be obtained in one or other of these directions that it was essential to have recourse to the more specific form of treatment, the use of autogenous vaccines. It could not be too clearly emphasised that in these cases—whether a vaccine was used or not—it was Nature that brought about the cure, the vaccine being merely a more specialised form of stimulating Nature to overcome the toxæmia or infection. There were two further points of general interest that occurred to him in connection with Dr. Robertson's paper. One was the importance, in the speaker's view,



of a chronic auto-intoxication or infection as a primary cause of mental disorders. He had been much impressed by some cases of mental disorder in which the examination of the patient showed clear evidence of physical disorder, such as a dilated condition of the stomach and cæcum, often associated with bacteriuria which had previously been unsuspected, and there was no doubt in his mind that in the cases in question these physical disorders had *preceded* the development of the mental symptoms. Dr. Robertson had referred to the frequency of intestinal infection. The speaker was in entire agreement with this view. There were many cases of bacteriuria in which the bacillary or coccal forms of organisms found in the urine undoubtedly came from the digestive tract. In dealing with these cases one had, first of all, to seek to determine whether these organisms had a causal or merely a casual relationship to the patient's disorder, and one had then to determine the presence or absence of any lesion of the digestive tract calling for medical treatment of a more general nature. In some cases of this kind he had found an associated marked dilatation of the cæcum, proptosis of the cæcum into the pelvis, and other indications of disease in the right lower quadrant of the abdomen, the correction of which by medical and sometimes by surgical means brought about recovery without recourse to vaccine therapy. Before he sat down perhaps he might be allowed to refer to one extremely interesting mental case which had been under his observation in the past year. The patient was a lady whom he had first seen in consultation with Dr. Bedford Pierce, the case being a very severe one of acute toxic insanity developing within three weeks after the birth of a child. Some idea of the severity of the case may be gauged from the fact that for several months the nursing involved the services of six nurses and a charge nurse. In the bacteriological investigation of the case they had the valuable assistance of Dr. Ford Robertson, who found diphtheroid organisms in the urine in scanty amount. The bowel was found to be loaded, and the contents showed clear evidence of chronic excessive putrefaction. The blood was in a condition of marked leucopenia, the white cells numbering 2,100 per cubic millimetre, the thyroid gland was appreciably enlarged, and there was occasional distinct exophthalmos. The conclusion arrived at from investigation of the case was that the mental disturbance was the result of an acute infection arising from the diphtheroid organisms found in the urine, the prognosis being guarded on account of the manifest lowered resistance of the patient, revealed by the condition of the blood and of the thyroid glandular system. The patient for many months subsequently was under the speaker's constant observation, daily observations being made by a skilled resident physician on the state of the blood, urine, and stools, the curves of the urine and blood being compared with the curves of sleep, excitement, etc. The recurring effects of carefully administered vaccine injection on the blood, urine, and mental symptoms were of the most striking character, and the critical consideration of the facts observed left no room for doubt as to the valuable and specific effects which vaccine injections exerted in the gradual recovery of the patient. Unfortunately the slow rate of recovery is admittedly a complicating factor in putting forward the case as an object-lesson in therapeutics. He had no hesitation, however, in saying that the severity of the bacterial infection was such that the natural recovery of the patient without the assistance of a specific vaccine was extremely improbable. After each vaccine administration there was an appreciable aggravation of all the mental symptoms, this being associated with a leucocytosis and a very remarkable increase in the discharge of bacteria in the urine; in a few days the increase in the symptoms passed off, leaving the patient invariably on a higher level than before the vaccine administration. The chairman had an opportunity of seeing this patient on one occasion forty-eight hours after the administration of the vaccine, the patient being then under the influence of the vaccine with its temporary exacerbation of the symptoms; and one had then been able as usual to foretell that in forty-eight hours subsequently the mental condition of the patient would be remarkably improved, and would not relapse to the same level as prior to the vaccine administration. It gave the speaker great pleasure to refer to the valuable nature of the work which Dr. Ford Robertson had done in calling attention to the great importance of the part played by the diphtheroid group of organisms in general infections.

Dr. FORD ROBERTSON, in reply, said he was glad that Dr. Bruce had spoken so strongly about the possible dangers of the use of vaccines. He was himself well

aware of these dangers, but they were of the very same kind as those that attended treatment by toxic drugs. Both were perfectly safe if administered intelligently by those who understood the action of the substances they were using. He strongly deprecated the use of living vaccines. He recognised with Dr. Chalmers Watson and Dr. McRae that vaccine treatment was an adjunct to other treatment. It rarely interfered with the carrying out of ordinary medical treatment. It was, however, often capable of effecting a cure after all other measures had failed. It was not sufficient to say that asthma and bronchitis could commonly be cured by drugs without vaccines. Very many cases would not yield to ordinary therapeutic measures, and it had been precisely in chronic infective conditions of this intractable nature that vaccine therapy had won some of its greatest triumphs.

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*The Villa or Colony System for the Care and Treatment of Cases of Mental Disease.* By T. E. KNOWLES STANSFIELD.

WHEN, towards the end of August, your Secretary wrote and asked me to give you a paper to-day on villa asylums, I was just arranging to start on my holidays, and I hesitated at first to accept his invitation, as I saw little or no prospect of being able to give the time necessary for the preparation of a paper worthy of the occasion. But, on the other hand, feeling more or less the responsibilities of a parent, seeing that this institution was in a great measure the outcome of my advocacy of the villa system, I felt compelled to make a special effort and try and give you something which would at any rate form a basis for what I hope may form a useful and interesting discussion.

Patients in asylums may be roughly divided into two distinct groups, namely, those who have a prospect of recovery, forming about 10 *per cent.*, and the hopeless chronic cases who make up the remaining 90 *per cent.*

For the first group we want acute hospitals, where we can concentrate our most experienced and most skilled medical and nursing staff, and which can be so arranged that each case will receive individual study, special care, and the full benefit of all the therapeutic methods available to facilitate and expedite recovery.

The detached hospital villa system which we have had in operation at Bexley Asylum since its inception, and which affords all these facilities, has proved eminently successful in every way, and has been reproduced at Horton and Long Grove, so that those of you who have not seen the system in

operation may possibly be able to visit one or other of these sister institutions to-day.

It is to the second group that I particularly wish to draw your attention to-day—the large bulk of our patients who are fated to spend the remainder of their lives in an institution. For these poor unfortunate creatures we want a home where they may enjoy ordinary comforts, and have their lives made as happy as their condition will admit of, at the least possible cost to the ratepayers.

I think you will agree with me that there is nothing so conducive to happiness and contentment as congenial occupation. It is not difficult to find suitable occupation for our patients, whatever the type of asylum structure we have to deal with, if we only have a large enough farm, and sufficient work-shop and needle-room accommodation. But it is difficult to collect the patients from the various wards, assemble them, count and hand them over to the various workmen, without the prison element of asylum life being constantly in evidence. Whereas in a villa asylum a large percentage of the workers can be intrusted with freedom of entrance and exit to their respective villas, and go to and return from work as ordinary beings. At Bexley I have both types of building, and the contrast is so patent.

In the barrack type of asylum, where all the wards are under one roof and more or less connected, it is practically impossible to give graduated degrees of freedom leading up to complete parole of the asylum estate. Whereas, in the villa asylum, each building may vary from its neighbour as to the amount of freedom which can be allowed to its inmates.

One invariably finds that those patients who are given the greatest amount of freedom are the most contented, are the happiest, and do the best work. The converse is equally true, for the more a patient's liberty is restricted, the greater is the discontent, unhappiness, and dissatisfaction. As you are all aware, it is the unemployed who always supply the chronic grumblers—the people who are always dissatisfied with anything you give them or do for them, and who are constantly railing against their incarceration.

At Bexley I have four villas for chronic male patients, and we have an average of about 170 male patients who have complete parole of the asylum estate. If I had more villas I could considerably increase this number. On the female side,

the only villa which I have besides the Acute Hospital is the Convalescent Home, and there the patients have an open door and parole of the large grounds around it.

It is no doubt due to the difficulties which the barrack type of building presents that the parole system has not been more generally adopted in this country. Indeed, unless such structure is supplemented by villas, or at least one or more blocks of the main building be favourably situated for the purpose, it is practically impossible to introduce the system. But another reason which I believe exists in the minds of some asylum administrators is the idea that such freedom offers opportunities to patients to escape from custody altogether, which they would not be slow to make use of. This theory, however, has by no means been borne out in practice at Bexley. I personally see every patient before he is given parole, and when I have taken his promise not to break his parole, I hand him a card on which I have written his name and which I have signed. This card the patient carries with him so that he can produce it at any time, and so avoid the annoyance of being questioned as to his right to be walking about the grounds. I am glad to say that during all the years the parole system has been in force with us, not 2 *per cent.* of the patients have broken the promise which they have given me. It is a new experience to many of these patients to be told, as patients, that they are trusted, and our experience shows that it is an honour which they guard very jealously. The effect on a simple-minded youth, for instance, on realising that he has been placed on his honour not to do a certain thing, is a side-study which is very interesting.

It is in human nature that a man should endeavour to overcome any material obstacle to his own freedom of action ; and with every evidence around him in the form of locked doors and barriers that he is not trusted, a patient loses not one atom of self-respect when in such circumstances he makes a more or less successful attempt to escape.

Placed on their honour not to overstep a moral boundary, many such patients will lead a far higher mental and moral existence, and will enjoy comparative contentment and happiness.

From the point of view of the care of the chronic patient I cannot, I think, do better than describe briefly the institution



which I consider approaches most nearly to the ideal asylum for this purpose that I have ever had the opportunity of seeing—that of Toledo in Ohio. I saw this asylum in 1894, during a holiday which I spent in visiting the principal asylums in the Eastern States of America.

This institution was built entirely on the villa system. It consisted of forty separate buildings, twenty-six of which were occupied by patients. The buildings were arranged in the form of a hollow rectangle, bisected by the administrative buildings, the one side being occupied by female patients and the other side by male patients. The buildings at either end, completing the square, were occupied by the noisy and violent patients. The cottages each had a verandah overlooking the square. The size of these squares, each of which formed a recreation ground, was large enough to allow of baseball, cricket, and football being played there. Without leaving their cottages the sick and infirm were able to witness the games played. The refractory patients in like manner were able to watch the games without leaving their verandahs. Each cottage was a simple two-storied brick structure, and they were placed about twenty yards distant from each other. They were not connected with each other in any way or with the administrative buildings, and the arrangement of each cottage depended upon the class of cases to be treated there. The cottages accommodated from twenty-eight to fifty patients each. The general plan was to have a sitting-room, reception-room, workroom, and nurses' or attendants' rooms on the ground floor, and dormitories and nurses' or attendants' rooms on the first floor. There was a large dining-room for the males and another for the females, each capable of seating 500 patients. To reach the dining-room the patients had to pass out into the open, the distance varying from 50 to 300 yards.

In the grounds were three ornamental lakes, each about two acres in extent and from four to five feet deep. These lakes were said to be a source of great pleasure to both patients and staff. They served for rowing and swimming during the summer and for skating during the winter. Whilst I was there, a number of patients were amusing themselves by catching the fish in one lake and transferring them to another lake just completed, to stock it. Over 20 *per cent.* of the patients had parole of the grounds. The gardening was done entirely by patients, without

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the assistance of paid men, the head gardener himself being a patient.

The general appearance of happiness and contentment I have never seen equalled in any asylum. This I attributed to the great amount of liberty given, and the manner in which the patients were employed there. In a word—they enjoyed a maximum of all that is best in the life of a model village, whilst, on the other hand, the irksomeness and restraint of institution life was minimised to a degree.

I do not think that our best efforts in this country to alleviate the monotony of the lives of our chronic insane by elaborate and tastefully laid-out airing-court gardens are comparable in value and effect for this purpose to the broader conception exemplified at Toledo with its communal life, and its larger human outlook. One finds, of course, that the efforts which we make to bring a little sunshine into the lives of our patients by beautifying their surroundings are amply repaid ; but I was much impressed at Toledo with the fact that, for the reasons I have stated, greater opportunities were afforded for normal social intercourse and the development of those common human sympathies which are so markedly lacking in the majority of our institutions for the insane in this country.

I have been a strong advocate of the villa system for our chronic insane ever since I paid my visit to Alt Scherbitz, near Leipsic, twenty-one years ago. Alt Scherbitz may, I think, be looked upon as the mother of the villa system of housing the insane. It is really a village populated by insane persons, though some of the houses were not, at the time of my last visit, the property of the Institution, nor were they or their occupants in any way connected with it. A building which had formerly been the village inn was, at the time of my visit, a home for male working patients. Two main roads run through the estate, and it is bounded on one side by the river Elster, which is unprotected, and on the other side by a railway line. The main road from Leipsic to Halle passes through the estate, dividing it into two portions. On the one side are the receiving-houses, the villas for the refractory patients and for the sick, aged, and infirm patients. On the other side is the colony for quiet working patients, the villas for the men being separated from the villas for the women by the medical superintendent's house and garden, the farm-buildings, farm-

yard, and the industrial buildings. About one-third of the patients are housed in the Colony, and form a hive of industry.

Germany has shown great appreciation of the villa or cottage system, and most, if not all, of the institutions for the insane built in that country during the past twenty years have been of that type. Those that I have personal knowledge of are Gabersee at Wasserburg, in Bavaria; Eglfing, near Munich, which was opened about seven years ago; Uchtspring, near Stendal, in Saxony; Galkausen at Langenfeld, near Cologne, and a colony for epileptics at Biesdorf, near Berlin. The new city asylum for Vienna is of the detached villa type. Each and all of these are well worth a visit.

Viewed from the administrator's point of view there are no special difficulties to be overcome in conducting the affairs of a villa asylum, and I have not heard any objections raised which I have found by my experience and that of others to be valid. The supervision of patients is quite as easy. The staff who have been accustomed to the barrack type of asylum at first very much dislike having to pass into the open from one building to another, but after overcoming this prejudice, they commonly express great appreciation of the difference, and usually say they feel much healthier and better than under the old system.

An old female officer, who had had long years of experience in asylums of the barrack type, was very antagonistic at first, and made innumerable objections and imaginary complaints; but after a few weeks these all ceased, and some time later, when the question arose as to the night supervision of a new villa which had been erected, she was most anxious, and made repeated applications to me to be given the supervision of the building. I pointed out that this would entail a very considerable increase in her work because of the distance she would have to travel in the open, but she stated that she enjoyed it, and that since she had to visit the villas she had found herself so much better in health, and the work had not been so monotonous.

With regard to the question of the distribution of food, the chronic patients may be fed either in central dining-rooms or in their villas. I prefer the latter, as being the more homely method. The food is much more palatable, and the cook is able to cater better for the individual likes and dislikes

of the patients. But there is no difficulty in distributing the food from a main kitchen if for any reason that is desirable. At Bexley we have both methods in operation for our villas. The distribution of food to a large number of villas is usually done by means of a wagon specially constructed for keeping the food hot.

*Risk of fire.*—A fire in an asylum is a danger we all fear more than any other calamity which can occur in an institution ; for there is no getting away from the fact that if a fire once gets hold of an asylum of the barrack type a most terrible holocaust will result, however perfect the available fire-fighting appliances may be. For this reason alone the villa or cottage type of asylum is worth consideration, for a fire in one villa would not endanger the whole institution, and the risk to life would be reduced to a minimum.

*Classification.*—I attach great importance to a thorough classification of the chronic patients as a means of promoting their greater happiness and comfort. At the same time by this means the cost of supervision is considerably reduced as compared with what it must be when all classes and types of patients are indiscriminately housed together. The villa system offers facilities for efficient classification which are not yielded by the barrack type of asylum.

As a basis for discussion I submit the following propositions :

(1) That the communal life of a country village is the ideal existence for the chronic insane.

(2) That the villa or cottage type of asylum best lends itself to this communal life by affording the best facilities for the employment of the patients and for giving them the maximum of personal freedom.

(3) That from an economic point of view the villa or cottage type is to be preferred to the common barrack type, as a cheaper form of construction can be employed, and the cost of patients' maintenance will be less owing to the greater value of the patients' labour.

(4) That the ease with which additional accommodation can be obtained by the building of new cottages should commend the villa or cottage type to governing bodies.

(5) That the administration of the villa or cottage asylum is not attended with any greater difficulties than are met with in the ordinary barrack type of asylum.

## DISCUSSION,

At the Autumn Meeting of the South-Eastern Division held at Epsom, Tuesday, October 7th, 1913.

Dr. STEWART expressed his cordial agreement with Dr. Stansfield's contentions, and referred to Belfast, where villa and barrack types existed side by side. He thought an undue spreading of villas over an unduly large area of ground might entail increased difficulty of administration.

Mr. CLIFFORD SMITH said: I propose to make but a few remarks on the subject that has been raised by Dr. Stansfield, but as I was one of his disciples when he first preached on the subject he has addressed you upon, I may, perhaps, be allowed to give this meeting some account of the progress that has been made with this type of building he advocated. Dr. Stansfield met with very little support in the early days, as the detached block system was considered disadvantageous to the patients, difficult to administer, and uneconomical in principle, while what is now called the barrack type of institution was considered to be a perfect type of building for the housing and treatment of the insane. However, the advantages of the villa system could not be denied, and the first buildings of the type were erected at my Committee's asylum at Bexley in 1897, and this institution Dr. Stansfield opened; since then villas were included in the original designs of the Horton and Long Grove Asylums, and have been added at the Manor and Colney Hatch, while the Epileptic Colony is a complete villa Institution. At one of my Committee's asylums a proposal to put up detached buildings was not accepted with favour, it being believed that the administration would be difficult, and the staff would suffer by having to go from block to block through the open. The buildings were duly erected and the result is the reverse of what was expected. I am assured that they are more in favour than the original buildings, while the contentment of the patients is such that they object to be transferred when necessity arises. The staff are unanimous in their approval of the new arrangements. With regard to the institution which you have paid us the honour of visiting to-day, these were designed by me to meet the views of a late member of the London County Council, Dr. Cooper, who had the idea of a colony for epileptics very much at heart, and wrote a pamphlet upon the subject. We had nothing to guide us for the preparation of the scheme, as no other place in England existed where patients were treated of the type which it was proposed to take, and I had, therefore, to fall back upon the data which Dr. Stansfield had brought from the German and American institutions he had visited, and my own knowledge of the continental asylums. The questions of the cost of one- and two-floored buildings came very much to the front in the design of the colony, and, as you have seen to-day, all the blocks are but one floor in height, this being because single-floored buildings are cheaper than two-floored buildings if the value of the ground is left out of account. Apart from the question of cost, however, the single-floored building is a necessity for the epileptic, as you know the negotiation of stairs is undesirable for them. The buildings here are arranged about a large open space, which may perhaps be compared with the green in our English villages, and the advantage, apart from the benefit an open space gives, is that, while the able-bodied patients take part in games upon it, those whose condition excludes them from active exercise are able to sit in comfort on the verandahs or at the windows of the villas and watch their fellows at play. Dr. Stansfield's contention that a villa asylum can be arranged as effectively, and designed as cheaply as the connected type is undoubtedly correct. The villa buildings maintain the individuality of their occupants, and they are as easily arranged as self-contained houses. Here each villa is independent in its heating arrangements, and hot-water services and central fireplaces provide the heat necessary for the day-rooms and dormitories. The single rooms are warmed by hot-water pipes worked from a stove in the ward store-room, while the bathing and hot-water services are either furnished from the kitchen boiler or from a special boiler in the bath-room. All the heating arrangements are of the usual type, and are in the hands of the attendants. The only sections of the colony requiring steam are the main kitchen, laundry, general bath-house and recreation room, and these are supplied from the boiler-house situated within the administrative area. The



eleventh asylum for the county of London, now in course of construction, is designed wholly on the detached building principle. The buildings cover an area of some forty-eight acres, and all except three of the patients' blocks, although detached, are connected by subways with each other and the central boiler-house, for the better working of the engineering, heating and lighting services. Above the ground the buildings forming the main asylum are, for the comfort and convenience of the patients and staff, connected by open-sided covered ways with each other and the administrative buildings. It may be said that I have failed to carry out the idea of the villa asylum by connecting the buildings, and I may perhaps admit that the open-sided corridors show a falling away from the precepts of my teacher, but I put them in as a concession to the staff. At other of my Committee's asylums where closed corridors originally existed, the sides of these have been removed to give open-air conditions, and the older members of the staff, and even some of the doctors, who had been accustomed to the closed passages, did not appreciate the change. The objections raised were gone into very carefully, and none of importance could be found against the open-sided corridors, which were not altered; but the absence of covered ways connecting the wards and administrative buildings has little to justify it, and thus I included the open-sided covered corridor in my design. It may be that my successor will have greater courage than myself and remove these, but my experience goes to show that in the large asylums, where the patients and staff convey most of the food and material from the centres to the ward, the covered way is not only of advantage, but is much appreciated.

Dr. PASSMORE said: I have listened with pleasure to Dr. Stansfield's paper, and agree with him as to the advantages of communal life on the village system for the insane. In early life, twenty years ago, I had the opportunity of seeing in Scotland the system of the boarding-out of patients at Kirkintilloch among the cottagers there. The patients did the necessary work in the cottage, and moved about in the village, and seemed happy and contented, and were in no way a nuisance. The bugbear in the past, from the economic point of view, has been the expense. The "acute" insane need the highest and most skilled housing and treatment; not so the chronic, whose needs might be summed up in proper housing and supervision. In my asylum, which we call a mental hospital, erected on both the barrack and villa type, patients who have been allowed freedom have never attempted to escape. In 1906, I was asked to give evidence twice before the Royal Commission on the Feeble-minded, and in my evidence I drew a plan advocating the village system for the feeble-minded. I feel this is the most economical way of dealing with them. A most important point brought out by Dr. Stansfield in his paper is that of fire. With regard to the conflagration at Colney Hatch, I am sure that in the villa system no such loss of life could have occurred. From the moral, economic, and family life point of view, I think the system of the village asylum is one that ought to be adopted by committees, and I trust the paper will bear good fruit.

Mr. HUNTER, of the L.C.C. Asylums Committee, spoke of the early days when Dr. Stansfield and Mr. Clifford Smith and he discussed the villa system, and eventually succeeded in initiating it at Bexley in spite of much opposition and many expressions of doubt.

Dr. SERGEANT asked what was the smallest size of villa that was practicable, and was informed by Mr. Clifford Smith that, after much consideration, a building for thirty-five patients and three attendants was decided upon as the one which could be most effectively worked. This applied only to epileptics. In the wards at the newer asylums the accommodation varied from sixty in the chronic blocks to twenty in the convalescent homes.

Mr. KEENE said that the possibility of boarding out patients referred to by Dr. Steen was seriously considered by the London Asylums Committee many years ago. The boarding-out clause in the Lunacy Act has been found impossible to work. Application to board out a patient may be made to the Committee by a relative or friend, but the consent of the guardians of the union to which the patient is chargeable is necessary, and if the patient is to be boarded outside the limits of the union the further consent of a justice is required. The patient would be no longer under the control of the Committee or the medical superintendent, but would have to be visited by the medical officer of the union to which he is chargeable. In only one case, so far as he was aware, had an application under



this section been granted by his Committee, and that was a failure. The Committee made many inquiries through the Foreign Office as to the boarding-out system in foreign countries and also as to the methods adopted in Scotland. Some fifteen years ago a clause adapting the Scotch system of boarding-out was, at the instance of the Asylums Committee, inserted in a Lunacy Amendment Bill introduced by the Lord Chancellor in the House of Lords, but the Bill was sacrificed at the end of the Session. He was doubtful whether the boarding-out system would be of much use in the County of London, as most of the friends and relatives resided within the county. Other counties with large rural districts might usefully employ this method if the Lunacy Act were amended. In any case it would be well to have the power, in order to make the experiment.

Dr. STANSFIELD spoke of the unanimity of opinion expressed, and the way in which various questions raised during the discussion had already been answered by other speakers.

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*Dysentery, Past and Present*<sup>(1)</sup>. By H. S. GETTINGS, L.R.C.P., D.P.H., Pathologist, West Riding Asylum, Wakefield.

#### ADJOURNED DISCUSSION,

At the Quarterly Meeting in London, November 25th, 1913.

Dr. SIDNEY COUPLAND, in opening the discussion, said: I need hardly say that I have read Dr. Gettings' paper with great interest, and have found it, as other readers must have done, very instructive as well as entertaining. What gives particular interest to his graphic story is the fact that it is based upon the continuous medical records of an institution for nearly a century, and in this respect it must surely be unique. From a remark in the paper, apparently more zeal in clinical note-taking was exhibited in the earlier than in the later period of the history of Wakefield Asylum, but I feel sure that, if this be so, the lapse can only be temporary. As regards dysentery, it is certainly remarkable that a disease, once fairly common in this country, should have almost entirely disappeared from the community at large, a disappearance which seems to have coincided with that of the last serious visitations of cholera in the middle of last century. Even if we accept the usual explanation that these diseases, like typhus, have been banished in consequence of wide-spread improvement in urban and rural sanitation, especially as regards drainage and water supply, we yet cannot ignore the fact that many an insanitary area still exists which *à priori* might be

expected to favour the spread of such disorders. We know, too, how great a scourge dysentery has been to armies in the field, where conditions of fatigue, exposure, imperfect diet, as well as defective sanitation, favour the development of intestinal disorders. My own limited experience confirms the fact of the rarity of dysentery in the general population. During the past thirty or forty years the average number of cases of dysentery admitted into the wards of the Middlesex Hospital has not exceeded one *per annum*, and in the seven years (1873-9) that I worked in the *post-mortem* room I only had to examine two subjects of dysentery, one of whom had contracted the disease in India. I was therefore much surprised to find, on joining the Lunacy Commission, that almost daily notifications were received from asylums of deaths from "colitis," mostly ulcerative in character, and clinically indistinguishable from dysentery, as had been well shown by Dr. Gemmel just about that time. Dr. Gemmel's monograph, published in 1898, was founded on his personal observations at Lancaster Asylum, where for some years "idiopathic ulcerative colitis" had prevailed. It would, therefore, seem as if dysentery, whilst dying out from the population at large, had found a habitat in asylums, whose inmates, owing to their careful segregation, were less liable to most of the zymotic diseases. Regarded as an infective disease, which Dr. Gettings holds to be a sufficient explanation of its persistence in asylums, one can well understand the difficulty in getting rid of it once it has gained a footing, owing to the conditions of asylum life, and the faulty habits of many of the inmates. But it is only of late that it has been so regarded, for it has been customary to ascribe its occurrence to bad sanitation, of which, indeed, colitis was almost considered to be an index. Such a view seemed to be supported by instances like those mentioned by Dr. Gettings in the Wakefield Asylum, of outbreaks of dysentery coinciding with grave sanitary defects, the removal of which was followed by the subsidence of the disease. A classical instance is that of the outbreak at the Cumberland and Westmorland Asylum in 1864, reported on by Dr. (now Sir) Thomas Clouston, then its medical superintendent. The outbreak, which was a severe one, and accompanied with a high mortality, was connected with the irrigation of fields adjoining the asylum with untreated sewage. Col. Kenneth

Macleod referred to this epidemic in a discussion at the Epidemiological Society in 1901, and said that when he himself was assistant medical officer at the Durham Asylum in 1864 there was a similar outbreak of dysentery also, and, as at Garlands, it was associated with sewage irrigation. These and similar instances all lent support to the opinion that dysentery resembled enteric fever in being a "filth disease," meriting as much as the latter the appellation of "pythogenic," which Murchison applied to typhoid.

But although such evidence favoured the doctrine of a *de novo* origin of dysentery, it did not preclude the acceptance of the fact that it was communicable or contagious, if only exceptionally. A striking instance of this mode of spread is recorded by Dr. Creighton (*History of Epidemics in Britain*, vol. ii, p. 790) as occurring in 1848: "The brig 'Sandwich' sailed from Cork for Boston, U.S., in the end of May, carrying a number of Irish farmers and their families. Having met with rough weather and head winds she put in leaky to Penzance on June 7th. sixteen days out from Cork. The provisions had been bad, and there was sickness in the ship, with a very filthy state of things. Three of the women passengers died on shore of dysentery. The ship sailed again on July 10th, two more of the emigrants dying of dysentery before she reached Boston, while two of the crew survived the attack. On July 16th two cases of the same disease occurred among the lower class in Penzance, and thereafter the epidemic spread widely through most parts of the town and the three adjoining parishes. . . ." In the town of Penzance alone there were as many as 500 cases, with 82 deaths. Here, at any rate, there could be no doubt of its spread by contagion.

I do not think that I could give a better illustration of the change in the point of view in which dysentery has come to be regarded than by quoting a few passages from the speech made by Dr. Murchison in the debate on the "Germ Theory of Disease," which took place at the Pathological Society in 1875. I well remember that debate, and how most of the eminent authorities who took part in it declined to accept as a theory what has now become a fundamental fact in the pathogeny of specific diseases. Dr. Murchison said: "I cannot conceive of anyone not biassed by pre-conceived notions about the germ theory denying the independent origin of diphtheria

and dysentery, which as to degree of contagiousness and other characters rank among the acute specific diseases with cholera and enteric fever." And he concluded his remarks by saying : "Lastly, on the germ theory it is impossible to admit that any contagious disease can arise independently of a pre-existing one. In point of fact the advocates of the germ theory deny that this is possible ; they will have no fact in its favour. But, did time permit, many facts might be adduced to show that certain of the contagious diseases arise *de novo* at the present day ; and all have probably done so at one time or another in the world's history. I will content myself by observing that the evidence of the independent origin of such contagious diseases as pyæmia, erysipelas, diphtheria, dysentery and enteric fever is, in my opinion, so strong that I can only conceive its being rejected by minds pre-possessed by the germ-theory" (*Path. Trans.*, vol. xxvi, pp. 316 and 319). When these words were spoken bacteriology was in its infancy, and there were few who appreciated the full significance of the work done by Pasteur and Lister.

It was not until 1900 that the prevalence of dysentery in asylums was explained as being primarily due to its infectivity, and that, as with typhoid, insanitary conditions, though conducive to its spread, were not essential to its origin. I believe this was first propounded by Drs. Mott and Durham in a report on the prevalence of dysentery in the London County Asylums. In the following year Dr. Mott read a paper on the subject before the Epidemiological Society. He showed that whilst not neglecting every hygienic precaution, and a treatment of the dysenteric patient on the same lines as a case of typhoid, it was necessary (owing to liability to recurrence) to keep him under observation, after his attack, lest he became a focus for fresh infection. By a system of notification and registration of the cases occurring in the London County Asylums and the adoption of his recommendations, a considerable diminution of the mortality from this disease has been effected in these institutions. Accepting, then, the view that asylum dysentery is primarily an infective disease, it becomes necessary to endeavour to explain the reason why it is so infrequent in some institutions, so common in others, where it may be said to be endemic. Then how are we to account for the occurrence of epidemics, sometimes of marked



intensity, if of brief duration? Dr. Gettings seems to favour the doctrine of an epidemic periodicity within asylum walls, analogous to the epidemic waves which have been noted in all countries from the dawn of medicine, and which have never been satisfactorily explained. But I think that a less vague explanation will often account for these outbreaks, many of which have been clearly traced to fresh importations of dysentery, or to coincide with soil-disturbances, defects in drainage and other conditions prone to favour a ready dissemination of the virus, and possibly also a higher degree of infectivity.

Speaking for myself I certainly felt, when listening to Dr. Mott's paper, that we required more definite knowledge of the prevalence of dysentery in our asylums, and could not but admit the force of the President's (Sir Patrick Manson) remarks as to the ignorance and inertia of lunacy authorities in the matter. The establishment of a register of dysentery and diarrhoea (on the lines of that framed by Dr. Mott) has resulted in the annual publication of a summary of returns from every asylum since 1902. These returns, together with information on details kindly furnished by medical superintendents, have afforded much material for study, besides enabling us to gauge the extent and distribution of dysentery in the asylums of this country.

The chart now produced has been prepared from the statistics thus obtained. In it the existing 95 asylums are ranged in the order of their opening, extending from the year 1814 to 1909. It has been drawn on a scale to indicate for each year of the decade 1903-12 the dysenteric incidence and mortality per 1,000 inmates. It will be seen that out of the 86 asylums which existed in 1903 there are 34 in which cases of dysentery were reported in each year of the decade, 35 in which cases occurred in from five to nine of these years, and 13 in which cases occurred in only from four to one of the years, there being five asylums in the last category, namely, Nos. 25, 44, 46, 71, and 77. Lastly, in four asylums (Nos. 5, 54, 80, 83) no cases were reported in any year. Of the remaining nine asylums one was opened in each of the three years, 1904, 1905, and 1909, and two in 1906, 1907, and 1908 respectively. Cases of dysentery were reported from the year of opening in three (Nos. 92, 94, and 95), in every year but the first in one (No. 91), and in



seven out of nine years in one (No. 87). Only one case was returned from No. 90 during the seven years it has been opened, whilst no cases have yet been notified from No. 89 (opened seven years) and No. 93 (opened six years). Selecting from the list only those institutions in which the average annual dysenteric incidence was not less than 20 per 1,000 (or 2 *per cent.*) of the total number of inmates, we find these amount to 27, of which number 20 had cases in each year of the decade, and 2 were asylums opened subsequent to 1903. It will also be seen from the chart that in very many asylums the cases of dysentery were quite scattered and sporadic, amongst them being the three before-mentioned as having been the seat of outbreaks in former years, namely, Nos. 2, 29, and 37. With the chart before us I may briefly allude to those asylums in which dysentery has been more or less persistent, indicating any special points it illustrates, but I must refer for more ample detail to the reports furnished from the asylums in the published blue-books. In No. 8, an old-established asylum, there were three distinct epidemics in 1905, 1907, and 1910, which considerably raised the average incidence-rate for the decade. These outbreaks were traceable to fresh infection either by admissions or from recurrence of the disease in a patient after a long interval. No. 13 is noteworthy from the fact that prior to 1909 the asylum had been fairly free from dysentery, but in that year the incidence-rate rose to 91 per 1,000 from 4.5 in the preceding year, and there has not since been very much abatement. In No. 16 the disease is endemic rather than characterised by epidemics, but the incidence has ranged from 35 in 1905 to 8 in 1910. In No. 17, with similar endemicity, there were excessive numbers of cases in 1906 and 1908, but whilst the incidence remained high there were no deaths from 1909 onwards. No. 20 is an important city asylum, where deaths from dysentery are reported every year; but the annual average incidence of the disease did not amount to 17 per 1,000 in the ten years under review. However, in 1910 there was a considerable outbreak, chiefly confined to the female inmates, and in that year the incidence was as high as 55. In No. 23 the years of chief incidence were 1903, 1905, and 1910, but the level has never been exceptionally high, although the average was about 21.

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No. 24 is an asylum where dysentery used to prevail to a large extent, and Dr. Legge has published a valuable report on it. It still occurs there, but to a lesser degree than in 1906-7. No. 26 is another asylum where much dysentery occurred in former years, with many deaths. Some outbreaks appeared to be connected with the excavation of soil near the wards. It will be seen that the incidence-rate was low from 1903-6 and that it then rose suddenly, attaining a maximum in 1909, since when it has declined somewhat. No. 28 is a very interesting example, as for several years it furnished the highest dysenteric mortality of all asylums. From 1903 onwards the disease has declined year by year in a striking manner, the rate falling from 87 in 1903 to 2 in 1910. It is worthy of note that this decline set in before the overcrowding was relieved by the opening of a second asylum in the county in 1907 (No. 91). It is interesting that most of the cases occurred in the annexe and not in the original building. No. 33 is an old-established asylum, which until 1903 received patients from an important borough as well as from the eastern division of the county. In that year a new asylum was opened, to which all the county patients were removed (No. 86). Cases of dysentery soon occurred amongst them, and increasing year by year the incidence-rate in No. 86 was as much as 109 in 1911, but fell to 63 in the following year. The rate in No. 33, which had fallen considerably, rose in 1912 to 47.5. No. 34, where there has always been a high mortality from dysentery, experienced a marked epidemic in the autumn of 1905, most of the patients being from wards on the ground floor. The outbreak coincided with the completion of new sewerage works, and no proof of contagious transmission was obtained. In No. 40 there were three definite outbreaks in 1905, 1907, and 1912, which last was the most severe, whilst there were but few cases in the intervening years, and in 1909 none at all. No. 47, too, is an asylum which had two or three outbreaks in the decade, the most marked being in 1904. This asylum is situated near the river Thames, and the medical superintendent reported that dysentery was especially prevalent when there were exceptional floods. No. 49 is an asylum where dysentery has long prevailed in varying degree; it will be seen from the chart that after an increase of cases in 1904 there was a decline for four years, after which the disease

recrudesced, and cases were numerous in the next four years. No. 51 had an average annual rate of 38 per 1,000, the years of highest incidence being 1909 and 1911; it is evidently endemic here. No. 53 is an asylum where there had been much dysentery prior to 1903, but where, since 1907, there has been a notable decline. No. 56 is a large borough asylum, which has been overcrowded; here, too, there was much dysentery in the first half of the decade, but a marked diminution in the second half. No. 57 is a small borough asylum, where, except for one death in 1904, there were no cases from 1903 to 1908, the numbers culminating in 1910 and 1911, and falling to one in 1912. Somewhat similar is the record of No. 62, also a small borough asylum, but here the epidemic phase lasted for three years (1907-9), and seems to have returned after a year's interval. No. 65 is another asylum of this class, where the proportion attacked rose suddenly to a high level in 1904, followed in the next few years by a considerable number of cases, but with low mortality; then no case occurred in 1909, and but few in the next three years. No. 66 has hardly been free from dysentery throughout the twenty years of its existence. It was the main field of Dr. Mott's observations, and the prevalence of dysentery was found to be associated with drainage defects. In this, as in other of the London County asylums, there has of recent years been a gratifying diminution in the dysenteric incidence, doubtless due to the strictness with which measures of prevention are enforced. No. 69 is an asylum where dysentery increased from an incidence of four in 1903 to one of forty-nine in 1906, since when it has fallen gradually to seven. No. 72 is another of the large London County asylums where, in 1905-6, the notified cases were very numerous indeed, but the deaths were comparatively few. The diminution in the numbers attacked since those years is equally striking. No. 74 is an asylum where there has been much dysentery during these ten years, the incidence being especially high in the years 1906-7 and in 1910-11. Much careful study has been given to the subject by the Superintendent, Dr. Menzies, as is shown in the reports which he sent in with his annual returns.

I must refer to these various reports for many interesting details which bear on the ætiology of dysentery in asylums. They will be found to contain many facts which support its



contagiousness, and also others which seem to favour its "pythogenic" origin, but which latter probably merely indicate various indirect means whereby the infective agent may be conveyed to fresh subjects. The evidence for its infectivity is especially strong in such instances as that mentioned where the disease has been directly carried from an old to a new asylum (*e.g.*, Nos. 33 and 86). There are two recently opened asylums where dysentery has prevailed from the first, namely, Nos. 92 and 94, in which there can be no doubt that the disease was thus transferred, and in each of them—asylums built on the most modern lines, and without any obvious sanitary defects—dysentery has been exceptionally common. It is not easy to account for the occurrence of an outbreak in an asylum hitherto free from the disease, except on the view of its being introduced from without. Such has been the case in No. 64, a borough asylum opened in 1888, which remained free from dysentery until 1909, when there was an outbreak with an incidence of 66 per 1,000. For the next twelve months the asylum was free from fresh cases, but in 1911 another outbreak occurred.

The chart before you may not convey the whole truth as to dysenteric incidence, for it is possible that not infrequently milder attacks may have been overlooked. But, as Dr. Mott pointed out, such cases may be just as capable of conveying infection as those that are more characteristic, and their presence might be one reason for the persistence of the disease in an asylum. From the returns, which included epidemic diarrhœa as well as dysentery, another chart (which I now hand round) has been prepared. In it the amount of diarrhœal incidence is superimposed on the dysenteric. To mention only a few examples: There is asylum No. 9, where dysentery is not abundant, but in some years, especially the first four of the decade, there was much diarrhœa in addition. In No. 20 there was much diarrhœa as well as dysentery in some of the years, and the same occurred in No. 24 in 1903. A remarkable epidemic of diarrhœa occurred in 1911 in No. 25, an asylum in which there had been only one case of dysentery throughout the rest of the period. There was no ground to suspect that this epidemic was dysenteric in character, and the same applies to several instances where diarrhœal have coincided with dysenteric outbreaks. In the case of No. 32 there was much diarrhœa in 1903, and again in

1906-8, being associated with dysentery in these latter years. No. 50 is a striking instance of the association of excessive diarrhœal incidence with a fair amount of dysentery, and to such a degree that a relationship was suspected between the two affections. No. 55, one of the largest of our asylums, has never had much dysentery, but a fair amount of diarrhœa, especially in 1908. In No. 61 there was much diarrhœa in the three years 1903-5, with dysentery in each except 1904; and in No. 75 there was a considerable outbreak of diarrhœa in 1909, and no small amount in the following years, but very little dysentery. No. 76, where dysentery was at one time common as well as diarrhœa, showed a great decline in both after 1905. One of the smallest asylums (No. 83) opened with an outbreak of diarrhœa, and another like outbreak occurred in 1911, but it has never had any dysentery nor any diarrhœa in the years 1905-12, apart from that in 1911. The asylum No. 91, which at its opening in 1907 received its patients from the sister asylum in the country (No. 28), had much diarrhœa in that year and subsequently, but dysentery did not make its appearance until 1908. From two asylums no cases either of dysentery or diarrhœa were reported, namely, No. 54 and No. 89 (opened in 1906).

Asylum dysentery is a fatal disease. The case-mortality on the total number attacked from 1903-12 ranged from 20 to 26 *per cent.* It must, however, be borne in mind that in many instances the only cases recorded in an asylum in a year were fatal ones, and that mostly a low incidence-rate was associated with a high death-rate (from dysentery), the deaths frequently equalling or out-numbering the recoveries. On the other hand, it will be seen that sometimes every case occurring in the year recovered, and that the death-rate was invariably much below the general average when the cases were numerous, and especially in epidemic years. One instance taken at random may suffice. In asylum No. 65 there were two deaths from dysentery in 1903 and also in 1904, but the incidence of the disease was more than seven times higher in the latter than in the former year. In spite of its fatality, dysentery does not contribute on an average more than 3 or 4 *per cent.* to the total number of deaths in asylums. A far higher contribution is made by tuberculosis, namely, from 16 to 18 *per cent.* In this third chart which I submit, an attempt has been made to

contrast the mortality curves of the deaths from all causes with those from these two diseases. It would appear that rise and fall of the general death-rate is generally associated with a like rise and fall in the tubercular, but less often with the variations in the dysenteric rate. It very rarely happened that the number of deaths from dysentery exceeded those from tuberculosis. This may be noted in No. 23, where, in 1910, the tubercular mortality was only 8 per 1,000 living, the dysenteric being 10. Other instances were: No. 34 (1905), T. 25, D. 31; No. 56 (1905), T. 9, D. 14; (1906) T. 12, D. 16; No. 65 (1907), T. *nil*, D. 11; No. 66 (1905), T. 9, D. 10; No. 68 (1906), T. 4, D. 7; and No. 72 (1905), T. 7, D. 14.

The main conclusions to be drawn from the facts contained in these asylum statistics and reports during ten years are practically identical with those based on more limited data, and set forth in the *Sixty-fourth Report of the Commissioners in Lunacy* <sup>(1)</sup>. The additional three years' experiences have only served to confirm those conclusions, with what is, perhaps, a most important exception. No mention was then made of the "carrier" doctrine as explanatory of the persistence of dysentery in asylums. I notice that Dr. Gettings puts this in

(1) (1) That in only about one-half of the asylums of England and Wales is dysentery so prevalent as to justify its being regarded as endemic or indigenous, and that in no small number of the remainder of these institutions the disease is very rarely met with, and in a few it does not seem to have appeared at all. (2) That its occurrence in epidemic outbreaks, though common, is by no means universal, some asylums, even with a high incidence-rate, being free from them. On the other hand, such outbreaks have arisen in asylums where previously cases have been few and sporadic, and in others their supervention adds materially to an already high dysenteric incidence. (3) That the occurrence of such epidemics is not easy to explain; sometimes local external conditions would seem to favour them, whilst often they are only explicable on the hypothesis of varying infectivity. (4) That undoubtedly dysentery is infective, *i.e.*, communicable, and the chances of such communicability are enhanced by the liability of the disease to recur. (5) That in view of the fact that so many asylums are comparatively exempt from dysentery, it is impossible to assert that such conditions as overcrowding or defective sanitation can *per se* determine its occurrence, however much they may conduce to its persistence, once it has gained an entrance. The same reasoning applies to the assumed special vulnerability of chronically insane and demented subjects, with degraded habits, as a sufficient ground for the exceptional prevalence of dysentery in asylums. They may furnish appropriate soil for the virus, the introduction of which into the asylum must be postulated, as also must probably be other essential factors, for otherwise it would be difficult to account for the immunity apparently enjoyed by precisely similar subjects in many similar institutions. (6) On the other hand, granted such conditions, that the insane are more prone to infection is proved by the comparative rarity with which the disease attacks the attendant or medical staff, in marked contrast to other infective diseases. (7) That the appearance of dysentery in many newly opened asylums can hardly be ascribed to imperfect hygiene, but is most reasonably accounted for by the fact that such asylums invariably receive chronic cases from other asylums where dysentery may have been prevalent.—*Sixty-fourth Report of the Commissioners in Lunacy*, p. 44.

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the forefront, and there is every probability that it often accounts for outbreaks for which no other explanation suffices. It has been satisfactorily proved to account for outbreaks of enteric fever and of diphtheria, and there can be no reason why it is not equally applicable to dysentery. But it must not be pressed too far, to the exclusion of the possible operation of other agencies which may less directly account for the dissemination of the disease, and thus lead to neglect of wise preventive measures. The circumstances in which cases of this particular infective disease are now mainly met with are such as to afford unique opportunities for its study, for it is confined within comparatively small and isolated communities, to which it must have been imported from outside, and within which its diffusion can be observed in every detail. It is gratifying that bacteriologists are working in this field, although so far, I believe, they have not succeeded in isolating the specific dysenteric organism, or, at any rate, unanimously agreeing as to its identity. Nor is this surprising, since the search for it amidst the luxuriant flora of the human intestine must be a most difficult task. Of the intricate nature of this research we have an excellent instance in the description of his work on this subject furnished by Dr. McKinley Reid to the last number of the *Journal of Mental Science*. There can be little doubt that ultimate agreement will be obtained and means thus afforded for more effective control of a preventable disease, and its eventual removal from the asylums of this country.

Dr. ROBERT ARMSTRONG-JONES said he desired to offer his tribute to Dr. Coupland for his most instructive and able summary of this question. He, the speaker, considered the prevalence of asylum dysentery to be a reproach to asylum administration. He had always taken that view. Dr. Bolton (under whose administration the present paper had been prepared) was formerly on the staff at Claybury, and he knew the precautions taken there. Dr. Coupland had covered much of the ground in regard to dysentery, but he had not referred to those sudden, almost fulminating cases, which sometimes occurred. In those cases the patient was perhaps perfectly well one day, and the next he was quite collapsed, with a temperature of  $105^{\circ}$ , but with no diarrhoea, and nothing revealed by physical examination indicating dysentery, yet the



next day or so the patient died, again without any diarrhœa or dysentery having been present, but at the *post-mortem* examination the whole region of the large intestine in the neighbourhood of the ileo-cæcal valve was found to be dysenteric, with the appearance of considerable false membrane, almost diphtheritic in character, showing that although there were no clinical symptoms observable, there was yet very decided pathological evidence of dysentery in these cases. With regard to the other point referred to by Dr. Coupland, he mentioned the nature of the soil upon which the asylum stood as having probably something to do with it. At Claybury there was a heavy stiff clay, but the buildings were erected on the top of a hill, which, theoretically, owing to facilities for drainage, was a healthy site; and in support of this may be mentioned the fact that their tuberculosis death-rate was smaller than that of most of the other London asylums. Very great care was taken to discover tuberculosis. He had read the contributions of Dr. Menzies upon the subject, and had tried to follow him in regard to the examination for tuberculosis cases. As to the relation of dysentery to sewerage, in the early days of Claybury Asylum all the sewage drainage was put upon the farm, and that might have had some causal connection with the outbreak of dysentery. Some thought it had, and the Asylums Committee decided to cut off the sewage from the farm and discharge it into the local authority's main sewer, but this did not stop the disease. They were very careful at Claybury in the treatment of this condition, and his own plan was, if a case of diarrhœa occurred in the asylum, and the condition on the second day had not yielded to treatment, that case would be isolated from the other patients. On the other hand, if the first motion was found to contain blood and mucus, isolation was carried out at once. Very careful isolation in that way had enabled them to keep dysentery under. A detached hospital in an asylum was not usually a large place, so that a large epidemic could not be treated with isolation. At Claybury there were only six beds on the male side, though there were thirty-two beds on the female side for isolation purposes. The patients from the female side were brought back into the main asylum when well, and, if possible, received into one block. There were three floors in this block—the top floor for the more able-bodied, the middle



for those less able-bodied, and the ground-floor for the infirm. The patients as a general rule were kept for a year in that block before being permitted to mix with the others. He would emphasise the rebuke implied upon asylum administration by the occurrence of dysentery. He was very glad that this had been felt by those in official authority by making it notifiable, and by calling the disease dysentery, and not colitis, which would be less of a reproach probably. The Lunacy Commissioners were to be congratulated on dealing with the question as they had. The interest the Commissioners had shown concerning cases of tuberculosis and dysentery could not but be helpful. He felt grateful personally for the tables which Dr. Coupland had prepared and presented to members, and he thought they would be of great service. Though it would be an expensive matter, he hoped the tables presented that afternoon would be published in the Association's journal, as the matter could then be studied by some 700 members, instead of only those who attended the meeting. In conclusion, he might state that he regarded dysentery as distinctly infectious.

Dr. BOLTON (Wakefield Asylum) also desired to thank Dr. Coupland for his interesting and instructive remarks. He would make some remarks which were, to some extent, complementary to Dr. Gettings' paper, which set forth the work which he had done. Three years ago when he, the speaker, went to Wakefield Asylum, he thought he would have very little trouble from dysentery, as the report for 1909 said there were very few cases, but before he had been there a couple of months there were six cases, five of which were fatal. It had not been the custom there to open the intestines and examine them from end to end; hence he was not surprised that some cases of the disease had been overlooked, and that dysentery had been regarded as less common there than the facts warranted. He soon obtained the services of a competent bacteriological worker so that the cases could be investigated, or rather, in view of Dr. Mott's work, re-investigated. His pathologist left after eighteen months, and then Dr. Gettings came on, and this contribution now submitted was the first result of his work. Three years ago he, Dr. Bolton, was going through the old records of the Institution, when he found, among other documents, a manuscript copy of the reports of the director from the opening of the asylum. It showed that dysentery had

been there almost from the commencement, and that as long as ninety years ago the disease was regarded as infectious ; and not only so, but it killed the housekeeper and the son of the second director of the institution. Measures were taken to disinfect the clothing of the patients, showing that even so long ago they were almost up to date in their methods. Dr. Gettings had shown that dysentery was endemic from the commencement, and that epidemics occurred in 1828, 1849, 1866, 1881, 1900, and finally, there was the epidemic of 1911. He was personally well aware that dysentery was infectious a few years before it was declared to be so in 1900. When he was at Rainhill Asylum he was told by Dr. Wigglesworth that it was an infectious disease, and it had for years been treated there as typhoid. Yet, though he knew that, he himself acquired the disease from a fulminating case such as Dr. Armstrong-Jones referred to. He had started his tea one afternoon in the medical officer's room, when he was sent for to go and see a patient who had suddenly collapsed, a woman. After seeing her he gave instructions for the usual treatment, and went back to finish his tea without first washing his hands. Five days later he had an unpleasant attack of dysentery. At Claybury, about 1900-1903, it was not the fashion to believe that sane persons could catch the disease ! He was sure the carriers disseminated the disease, and later on, in 1903-1904, at Hellingly Asylum, he tested the stools of some hundreds of female cases, which occupied several months. Eighteen or twenty of those women showed shreds of mucus in the motions, which for some days had apparently been normal. For some months after that there were no other cases on that side of the Institution, though there were on the male side, where similar precautions had not been taken. On going to Rainhill Asylum he had the opportunity of carrying out the same method on the male side of the chronic asylum, where there were 600 patients. There were some forty cases at the time, and he got together all the infective cases, which, during the quiet period, showed a small shred lying on a portion of the stool. For more than two years after that there was no further case on the male side, though on the female side cases were continually occurring. He was careful about the admissions, and he believed he had got rid of the carriers. Permanent isolation was essential. All sorts of methods had been tried ; in

Wakefield Asylum the efforts extended over ninety-five years, and when these efforts coincided with a decline in the rate, the decline was attributed to the method ; whereas, if a remedy were tried during an increase of cases, it was said the remedy was useless. In 1825 overcrowding was attributed as the cause. In 1833 square apertures were cut into the rooms to improve the ventilation. In 1871 the main drainage and the ventilation were blamed, and they were altered, but the disease was not got rid of. Sewer-gas was also regarded as the cause, and some of the larger ventilating shafts were closed up. In 1900 there was another violent epidemic, and afterwards Dr. Lewis instituted the giving of white mixture. The epidemic disappeared, and it was considered to have vanished because the white mixture was given. One might equally say that, twenty-five years ago, the epidemic was got rid of by closing the ventilating shafts. With regard to the 1900 Wakefield epidemic, there were fifty cases each year, and after the use of the white mixture they went down to eleven, eight, three, six, one, and finally in 1908, there were said to be none. In 1909 there was one ; in 1910, eleven ; in 1911, thirty-five ; in 1912, seventy-eight ; and during the present year there had been seventy-four cases so far, and there probably would be some more before the year was out. Perhaps some slackness had been induced before the 1911 epidemic by regarding the cases as rare ; some of the cases were given the benefit of the doubt and said to have died or suffered from piles. Dr. Armstrong-Jones was adopting at Claybury Asylum the identical method which was being carried out at Wakefield ; and he, Dr. Bolton, proposed to keep the cases in isolation a long time, if not permanently. The *Journal of Mental Science* for April last contained a review of his, Dr. Bolton's, reports. He did not know who wrote it, but it stated that he, Dr. Bolton, did not believe in the white mixture which had been used. He did not believe in it, either in white or black mixture, except in so far as it cleared out the bowels and avoided intestinal accretions. The reviewer evidently thought the case for white mixture proved, as "colitis is colitis" and cannot be concealed. In reply to this, he might say that Dr. Ellis minimised the epidemic of 1829 as much as possible, for, in his report, he said : "A few fatal cases of dysentery occurred in the early part of the year, but for some time past the house has been free from that com-

plaint." Dr. Gettings had gone through the figures for that year, and found that from March to July alone, out of nineteen *post-mortems* fifteen had died of dysentery ; so it seemed that too much reliance could not be placed on what was said by the staff or directors of the institution. He, the speaker, wished to specially draw attention to the great importance of a systematic and thorough examination of the stools, so as to detect the carriers as far as possible. As it was unpleasant work, it was impossible to get officers in large asylums to do it unless they were enthusiastic. He hoped that before long there would be available a bacteriological method which would enable diagnosis of this condition to be made with the same certainty as in syphilis or typhoid. Probably a great deal of work was needed to bring this about, but under the stimulus of Dr. Gettings' paper he hoped others would work at the matter, so that when another severe outbreak was due to occur, it could be either banished or very greatly minimised.

Dr. GETTINGS, in reply, said Dr. Bolton had referred to the epidemic years in Wakefield Asylum. In going over the records, he found that 1825 was a very hot summer, whereas Dr. Coupland considered that epidemics of dysentery arose in wet and cold years. It was interesting to note that epidemics of dysentery used to arise in Wakefield Asylum at the same time as in the country generally. Yet the asylum was a little self-contained community and no fresh introduction of the disease could be traced as having taken place. On looking at Dr. Coupland's excellent chart, it would be found that in a number of cases the waves were at the beginning and end of the period shown, showing that these epidemic years of dysentery coincided with those at Wakefield Asylum. Dr. Armstrong-Jones had referred to the prevalence of this disease as a reproach to asylums. His old teacher, Sir Patrick Manson, was very severely down on it too ; he used to say dysentery was a disgrace to English asylums. Now, when he, the speaker, came to take up asylum work, he began to consider it was not such a reproach as it was thought to be, because after every effort at disinfection and scrupulous cleanliness, as well as isolation, had been taken, the disease still went on, and it was no doubt due to the carrier, who gave no evidence of having the power of communicating the disease. The difficulty was



not in the finding of the causal organism in the fæces of the ordinary case ; in fact his laboratory " boy " did it regularly. The difficulty was that the carrier gave no signs. A woman patient had dysentery recently, of which she died in three weeks ; and when he made the *post-mortem*, he found she must have had it three years, during which time she gave no signs, but went about her work in the ordinary way. If a pathological test could be established for these cases, that would settle the whole question ; for when once the carriers were eliminated, epidemics would be abolished in a few years ; certainly the disease would no longer be a scourge.

(<sup>1</sup>) *Journ. Ment. Sci.*, October, 1913, p. 605.

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*The Clinical Value and Significance of Leucocytosis in Mental Disease*(<sup>1</sup>). By D. J. JACKSON, B.A., M.D., Ch.B., Assistant Medical Officer, Cardiff City Mental Hospital, late Assistant Medical Officer, County Asylum, Chester.

THE problem of leucocytosis has been the subject of much discussion in recent years. Amongst the earlier workers on the subject Virchow stands prominent, and he first gave the name of leucocytosis to a temporary increase in the number of leucocytes in the blood, this occurring both in physiological and pathological conditions. During the past twenty years special attention has been paid to this phenomenon, bringing to light some very important information. Amongst later workers Metchnikoff has done more to enlighten us as to the problem than any other worker. To briefly recapitulate his doctrine. The leucocytes protect the organism against harmful germs by catching them up in their pseudopods, by investing them, and thus robbing them of the possibility of exerting their deleterious action externally. The termination of an infective process would therefore depend alone on whether leucocytes possessing this function are present in the blood in sufficient numbers to overcome the invasion of the germs. The doctrine of Metchnikoff has been modified and also extended by other workers, notably Denys, Löwy, and Richter, who have proved that the value of the leucocytes does not depend on their pseudopods, but that their chemical products yield the strongest



protection to the organism. The leucocytes are able by means of the bactericidal or antitoxic substances which they give off to paralyse the toxins produced by the bacteria, and in this way render the microbes harmless by depriving them of the weapons of attack, even if they cannot destroy them.

Much has been written of recent years regarding the clinical significance of leucocytosis. In practically all the acute infectious diseases, and in all disease of bacterial origin in which toxins play an important part, there is generally found during the course of the disease a leucocytosis, *e.g.*, pneumonia, erysipelas, and septic conditions of various origin.

Perhaps the one most carefully studied in this respect is pneumonia, and it can be said that the occurrence of leucocytosis is a constant phenomenon during the typical course of this disease.

Pneumonia is believed by some observers to be a local manifestation of a general disease, and whatever type of lesion the pneumococcus produces, one thing is always observed—the intense stimulation of leucocytic action, both immediately and afterwards during the progress of the lesion. In the infection of the meninges, lungs, or pleuræ, pathological examination shows the lymph-spaces to be filled with leucocytes. Clinically it is recognised that a large white count in pneumonia is of good prognostic significance. From these and other facts it would seem that the leucocyte plays an important part in the resistance to pneumococcal infections. The cases which suffer from a very severe toxæmia, or which are atypical in their course, often show a leucopænia, and it has been shown by several observers (Löwy and Richter, Jacob) that an artificial hyperleucocytosis influences the course of an infective process favourably, at all events in experimental animals.

As a rule the infectious diseases begin with a leucocytosis in which the greatest increase is seen in the neutrophile cells, and it is mainly with these that we are concerned.

Applying the phenomenon of leucocytosis to acute attacks of insanity it is necessary to have a general view as to the probable origin and exciting cause of the attack. The insane person is generally one who starts life with an hereditary taint or neuropathic predisposition, and as he advances to manhood he becomes subject to the action of various toxins arising from different poisons, such as alcohol, syphilis, influenza, etc. In

a normal individual these poisons exert a very deleterious action, in many cases breaking down the strongest constitutions, but in the case of those with an heredity of insanity, crime, tubercle, etc., the toxins of the above microbes are able to work with greater vigour on soil already prepared.

Asylum statistics show how large a proportion of insanity has for its exciting cause such poisons as alcohol, syphilis, tubercle and influenza. Although these may not be directly attributable causes for the attack, yet by lowering the general vitality of the subject they render him liable to other infections which thus precipitate the attack. The typical case of confusional insanity which is daily admitted into the asylums of this country resembles that of a man suffering from an acute toxæmic condition, *e.g.*, we generally find the following picture on admission :—

Patient poorly nourished ; for a considerable period has not been taking his food and sleeping badly ; restless, agitated, and generally confused ; tongue furred, mouth septic ; breath foul, with sordes on the lips ; pulse rapid, feeble, and probably irregular ; bowels constipated ; urine high-coloured, with traces of albumen ; temperature varying from half to two degrees above normal. Examination of the intestinal flora of such a patient shows that it is abnormal, and often septic organisms may be isolated from the genito-urinary tract—the patient apparently suffering from a general toxæmic condition.

In such cases as this, systematic observations on the white cells of the blood are most useful from the view of diagnosis, prognosis, and treatment.

In the following typical cases the method I adopted was as follows : The blood specimens were taken each day about the same time, and preferably not sooner than three hours after a meal in order to prevent the occurrence of physiological leucocytosis due to the digestion of proteids. Blood-count taken by the ordinary Thoma-Zeiss hæmocytometer, and at least two slides taken for the differential count. I generally counted 400 cells in order to avoid sources of error, and by multiplying the number of leucocytes in each c.mm. of blood by the percentage of polymorphs, and dividing the result by 100, the number of polymorphic cells in each c.mm. of blood was computed, and as these are the main fighting cells with which we are concerned, on their number the following charts have been

drawn up. The slides for differential count were generally stained with Louis Jenner or Leishmann, though the May-Grunewald was also occasionally used.

The different types of case examined include the following : Acute mania, acute melancholia, and acute manic-depressive insanity, general paralysis, dementia præcox, and epilepsy. Many of these observations were continued over several months until the patients had either recovered or had come to be regarded as irrecoverable.

CASE 1 : *Confusional insanity*.—E. B—, female (admitted February 20th, 1911), æt. 37. Supposed cause : hereditary factors. Duration : six weeks. History : She had been nursing her baby for some time previous to her admission. She had also a lot of domestic worry and had allowed herself to get into a low state of bodily health.

*State on admission*.—She was excited, restless, and at times noisy. She talked in a disconnected and almost incoherent manner. Occasionally she had disorientation of place, talking, shouting, and imagining she was on the sea-shore. Said her husband was in the room opposite. She apparently had hallucinations of hearing. She would bury her head in the pillows, talking incoherently about the children, saying she wanted to plough, sow, and reap, made grimaces, ground her teeth, clutching a towel, and was generally excited.

*Physically*.—She was very anæmic and in a bad bodily condition generally. Her tongue was furred, breath foul, and bowels constipated. Appetite poor. Her heart-sounds were weak and action irregular.

*Lungs*.—Nothing abnormal could be found.

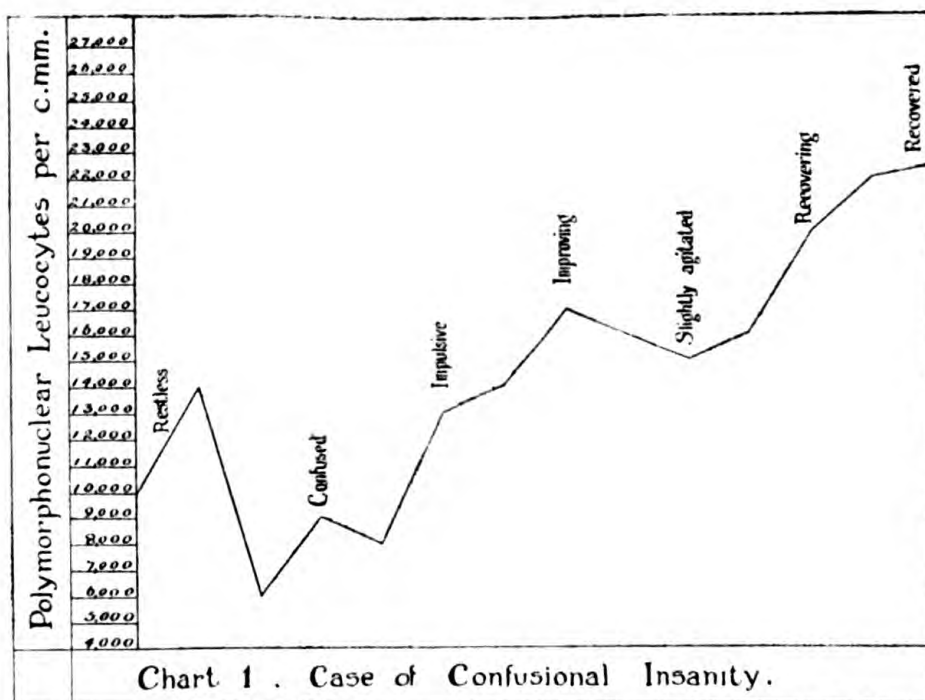
*Kidneys*.—Ditto.

A leucocytic count on admission showed variations from ten to seventeen thousand leucocytes per c.mm. For several weeks after admission her leucocytic count oscillated, and during this period she continued restless, confused, and at times resistive, noisy, and impulsive, having to be confined to a padded room. She showed a great tendency to constipation, and she was well dosed with Epsom salts, and kept principally on a milk diet, with beef-tea and gruel.

About a month after this treatment was commenced she began to show some improvement ; she became quieter, showed an appreciation of her surroundings, and recognised the fact that she had been ill. She slept much better and began to eat her food. As her mental condition improved her leucocytic count showed a corresponding increase, rising steadily up to

20,000 leucocytes per c.mm. A differential count showed that the greatest increase was to be found in the polymorphonuclear cells, whilst there was a diminution in the mononuclears. Her mental condition continued to improve for about six weeks when she had a relapse, again becoming restless, uneasy, and generally excitable. She again showed a tendency to constipation, and lost all desire for food.

Correspondingly her blood-count fell down to 5-7,000, the polymorphic cells registering only from 57-62 *per cent.* Careful



regulation of her diet and bowels resulted in a general improvement of her condition. She again recognised the fact that she had been unwell, and from this onwards she continued to show a decided mental improvement, and was allowed to work in the kitchens, where she evidently felt more at home. After three months' residence in the asylum she was discharged as recovered. During her period of convalescence her leucocytic count, taken daily, showed about 27,000 leucocytes per c.mm., with a high percentage of polymorphic cells, showing that her resistive powers to the toxæmia from which she had been suffering were much increased. On discharge she had increased a stone in weight. A report from her husband a few months

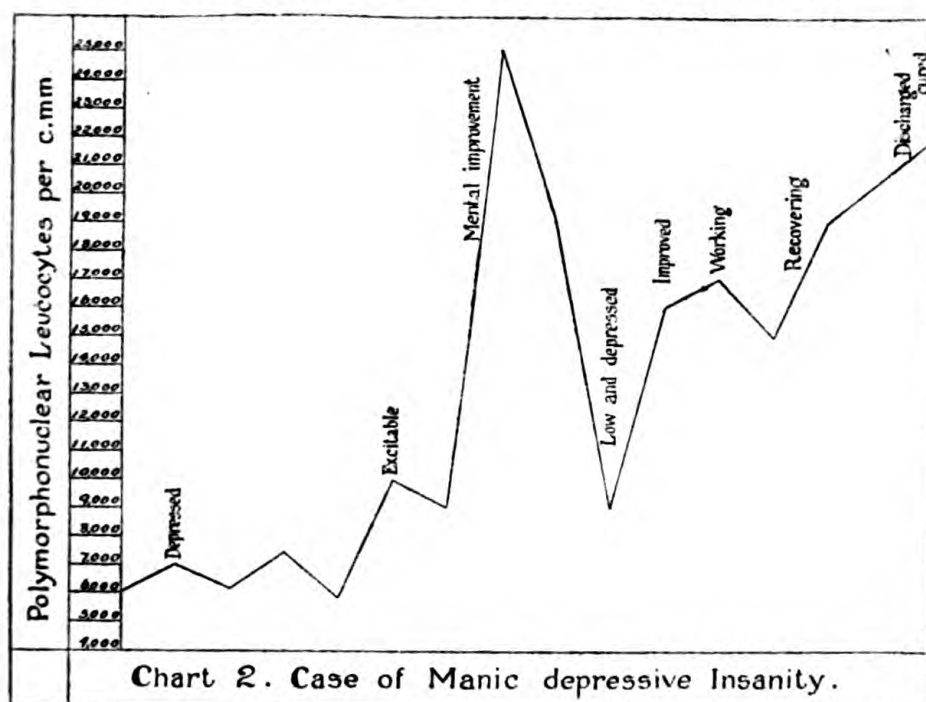


after her discharge showed that her mental improvement was well maintained.

CASE 2: *Manic-depressive insanity*.—J. M. B—, female (admitted December 7th, 1910), æt. 24. Duration: two months. History: No hereditary history or neurosis could be traced. She had neglected herself, and got into a low state of bodily health—lived principally on tea and white bread; had allowed her bowels to remain constipated for a week at a time.

*State when leucocyte observations were commenced:*

*Physical*.—Tongue furred and dry. Teeth defective; breath foul;



anæmic and sallow. Temperature was  $98.2^{\circ}$  F.; pulse, 95. Lungs: her respiratory note was generally weak, but no organic changes could be detected. Heart-sounds almost inaudible, and the apex-beat was displaced downwards and outwards. Her bowels were very resistive to treatment, and it was only by a combination of enemata and Epsom salts that the bowels could be kept open.

*Nervous system*.—Tongue was slightly tremulous. Knee-jerks diminished. No "Babinski." Eyes reacted sluggishly to light and accommodation.

*Mental*.—She was dull, and her consciousness to her surroundings was very much clouded. She did not know where she came from or where she was. Her answers to questions were chiefly restricted to "Yes" or "No." She was inclined to refuse her food, and took absolutely no interest in her surroundings. Occasionally she would get out of bed and try to climb through the window.



Her leucocytic count varied from 5,000–10,000 leucocytes per c.mm., with a low percentage of polymorphic cells. Under proper dieting she became more rational in her behaviour, and began to take a slight interest in her surroundings.

Her blood-count rose steadily to 30,000 leucocytes per c.mm., and during this time she continued to show decided mental improvement. She continued to improve for two months when she had several relapses (*vide* Chart II), but in a short time she again started to recover, and from this time onwards the progress of the case was uneventful. She was discharged after six months' residence. During the above remissions her blood-chart synchronised with her mental condition—an increase in the leucocytes going hand in hand with an improved mental condition. It should be noted that for several months before her discharge her leucocytic count remained pretty constant between 23,000–27,000 per c.mm.

Her subsequent history after discharge was good, and she has not had any more attacks.

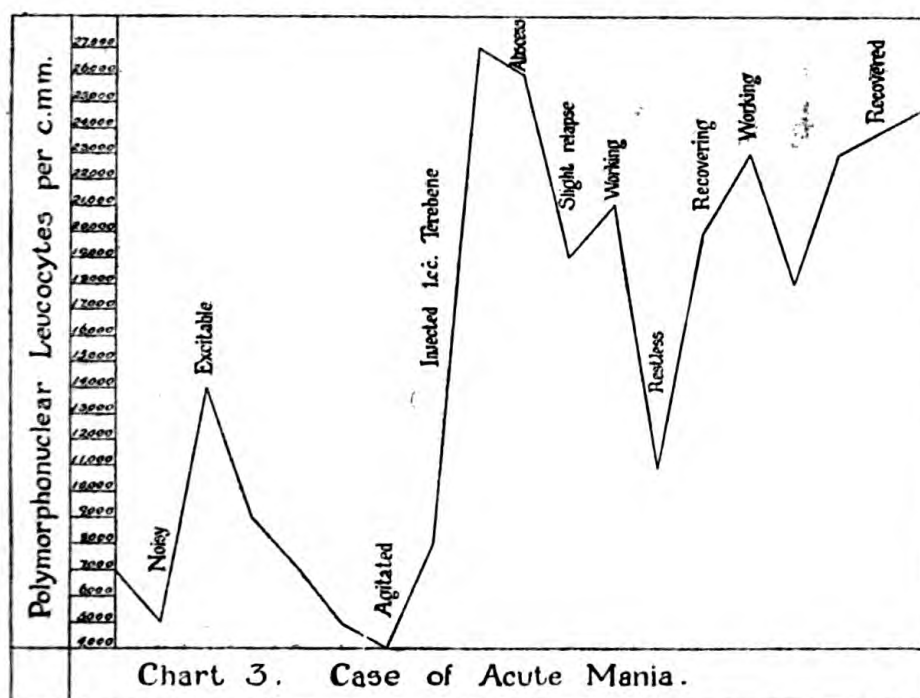
CASE 3 : *Acute mania*.—E. H—, female (admitted February 10th, 1911), æt. 29. Duration : three weeks.

*State on admission*.—She was very excitable and restless, and it was with difficulty she could be kept quiet. She roamed restlessly round the ward, moved her arms and body into all kinds of positions, and was quite irrational in her behaviour. On being questioned she laughed in a foolish manner and made grimaces, then commenced to chatter to herself in a silly way. She had hallucinations of sight, and used to imagine that her room was filled with people. She was dirty in her habits. Physically : Her tongue was furred, her breath foul, and her bowels were constipated. There were sordes on her lips, and her appetite was poor. There was a slight systolic murmur in her mitral area, but her heart was not enlarged. Normal vesicular breathing was heard over the chest. Her urine contained a slight trace of albumen. Her knee-jerks were diminished. No "Babinski" or ankle clonus present. Her pupils were more widely dilated than normal, and both reacted sluggishly to light and accommodation.

After admission she was given calomel gr. iij, followed afterwards by a saline purge, this being repeated every alternate day. She still continued restless and noisy, so a series of hot baths were given her. These helped to give her sleep and made her much quieter.

Her leucocytic count varied between 7–10,000 per c.mm.

and her percentage of polymorphic cells was about 52-58. After three weeks of treatment she was somewhat quieter, although still foolish and irrational in her conduct. As her leucocytic count did not show any considerable increase, I injected 1 c.c. of terebene into her flank. In a few days an abscess arose at the site of the injection, and as she was rather restless she managed to pull off the dressing, and so got a secondary infection. Concurrently her leucocytic count commenced to rise to a level of almost 30,000 per c.mm., and



mentally she became much more coherent in her conversation and commenced to show an appreciation of her surroundings. By the time her abscess had healed up, she had shown a decided mental improvement, and commenced to take an interest in the work of the ward, although at times she became rather restless.

Her blood-count, taken daily, showed a hyperleucocytosis of about 27,000 per c.mm. with a high percentage of polymorphic cells, a decrease in the mononuclears, evidently showing that she was reacting to the toxæmia from which she had been suffering.

Her mental condition with occasional relapses continued to

improve. She was allowed to work in the laundry, and she gradually resumed her normal mental balance again.

On discharge two months later, recovered, her blood showed a leucocytosis between 23–30,000, the polymorphic cells averaging about 70–78 *per cent*.

CASE 4: *Mania, with suicidal tendencies*.—C. E—, female (admitted October 10th, 1910), æt. 38. Duration: two weeks.

*State on admission*.—She was very noisy and troublesome and tore all her clothes off. She would scream and shout for hours at a time,

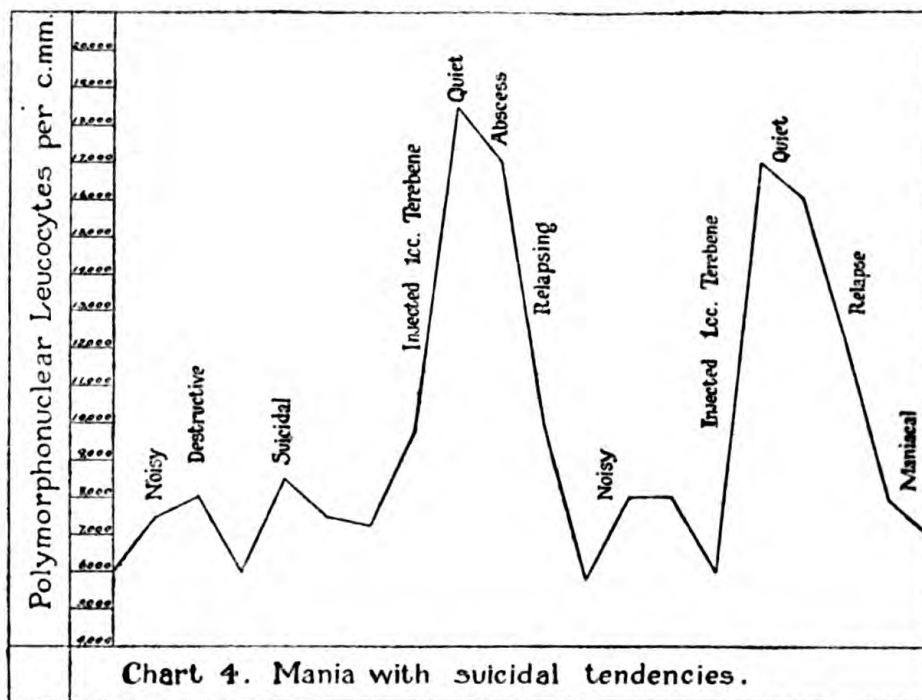
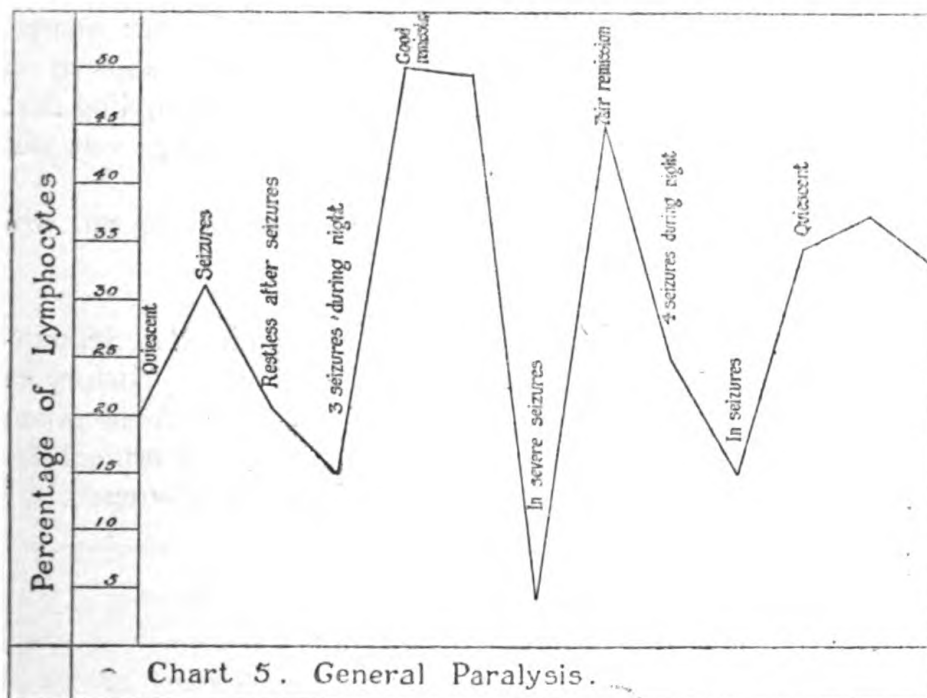


Chart 4. Mania with suicidal tendencies.

until exhaustion caused her to stop. On being questioned she disregarded everything that was said to her and would only answer in some blasphemous words. She several times attempted to commit suicide by tearing strips from the rugs and tying them round her neck.

The usual course of treatment was adopted, sedatives, baths, purges, etc., but she still continued as noisy as ever. For a day at a time she would keep quiet, but she would then have an outburst that lasted a week. Seeing that no treatment seemed to have any avail, I sent her to bed and injected 1 c.c. terebene into her flank, and in about a week's time she developed an abscess. Mentally she seemed much improved and became much quieter. Her blood-count showed a marked

hyperleucocytosis; it had formerly been below normal. Her mental improvement was maintained until the abscess had healed up, when she became as noisy as ever and showed a recurrence of all her symptoms. Her blood-count fell to the low level it was at previously. In about another week's time I gave her an abscess in the other flank by injecting 1 c.c. terebene and she again became much quieter in her conduct and more rational in her conversation. This condition remained as long as her abscess was still in an active state, and during this



period she exhibited a well-marked leucocytosis. Unfortunately as soon as the abscess had healed she again relapsed into her former noisy state, and on several occasions tried to commit suicide. Her leucocytic count remained low, *viz.*, 7-10,000 per c.mm., and she still remains in the asylum, being as noisy and troublesome as ever, with no indication pointing towards a recovery.

Cases of general paralysis were next examined. For the purpose of accurate information ten cases were chosen, most of them at different stages of the disease. Their temperatures were taken at morning, noon, and evening; any variations from the normal were immediately reported, so that the cause, if any,

LX.

5

could be investigated. Special attention was also paid to any change in their mental state, as undue excitement, depression, etc., so that blood specimens might be taken under all possible conditions. These observations have been carried on for a period of nine months.

During the remission period (*vide* Chart 5) each case without exception showed a well-marked lymphocytosis, but as soon as seizures commenced the blood picture was changed; a polynucleocytosis ensued whilst the lymphocytes fell down to a lower level than the recognised physiological mean. Marked changes in temperature, *e.g.*, a rise of 2° F. with undue mental excitement, though seizures were absent, also showed a corresponding change in the leucocytic formula resembling that found in seizures, *viz.*, a polynucleosis, but the change was not so pronounced.

A typical case (Chart 5) selected from one of the ten will illustrate these changes.

CASE 5 : *General paralysis*.—D. L—, male (admitted September 26th, 1913), æt. 39. Duration : nine months. History of previous syphilitic infection. A few of the observations taken during the course of his case are as follows. (Eosinophiles and basophiles are not included, for the sake of clearness.)

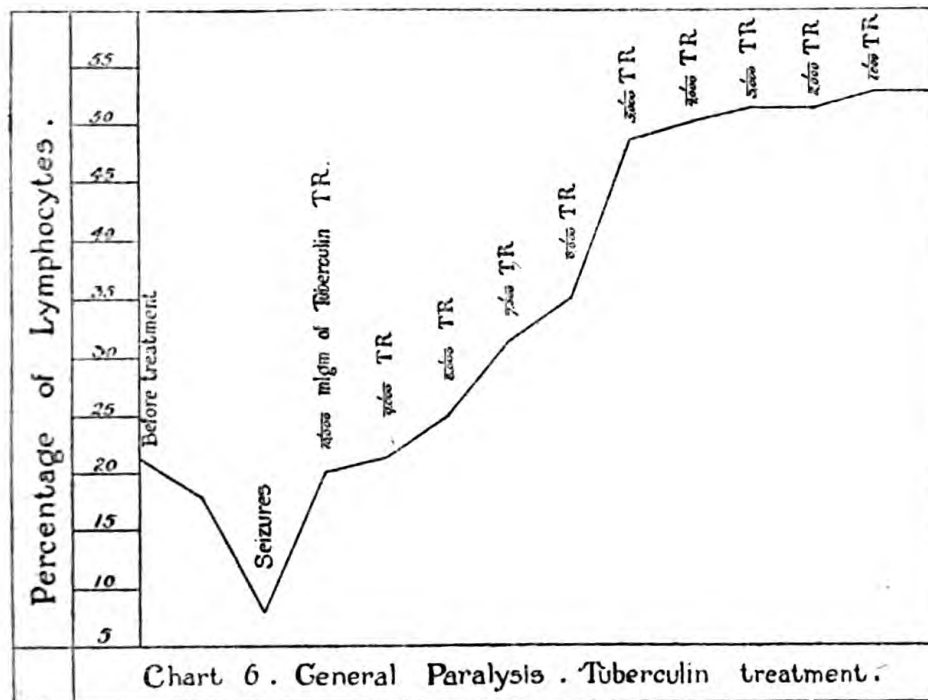
Date.	Total count.	Percentage of polymorphs.	Percentage of lymphocytes.	Remarks.
27 : 12 : '12	17,000	79.5	19.0	In seizures.
19 : 2 : '13	12,000	80.5	16.5	After seizures.
11 : 4 : '13	21,000	84.0	16.0	Seizures during the night, with marked tremors still present.
23 : 5 : '13	8,000	52.5	47.5	Good remission, working.
24 : 6 : '13	23,000	92.0	7.0	In seizures.
25 : 7 : '13	12,200	60.0	39.0	Fair remission.
31 : 7 : '13	18,000	85.0	15.0	In seizures.
29 : 8 : '13	9,200	65.0	34.0	Quiescent, but somewhat restless.

He had several seizures towards the end of September, and died on October 1st, 1913.

The other cases showed similar variations, a polynucleosis being present with seizures, and a remission state being characterised by a lymphocytosis.



Analysis of the recurrence of polynucleosis with seizures would point to the fact that the seizures were directly connected with a recurring toxic process or infection. During the remission period, when many general paralytics are able to be up and doing some ward work, the blood picture changes, and a marked diminution in the number of polymorphic cells is seen with a large relative increase in the number of lymphocytes. From this it will be seen that lymphocytosis is characteristic



of the remission period of the disease, and polynucleosis is a constant of the period when seizures occur.

Arguing on the above lines that lymphocytosis is a constant always found in remission states, anything that tends to encourage or promote lymphocytosis will also tend to promote a state of remission, a series of cases was taken, and having made a few preliminary observations on their blood, a series of tuberculin injections were commenced. Two of the cases received injections of T.B. emulsion, and the other two received tuberculin T.R. The dosage started was  $\frac{1}{10000}$  mgrm. in each case, and no striking changes were noticed in the blood until  $\frac{1}{5000}$  mgrm. was reached, when a fall in the polymorphs was noticed, and this continued until the dosage in each case

reached  $\frac{1}{1000}$  mgrm., when a well-marked and continuous lymphocytosis was seen present (Chart 6).

Since then I have tried two fresh cases with tuberculin T.R., starting with the following dosage :  $\frac{1}{1000}$  to  $\frac{1}{500}$ , etc., and so on, until a dose of  $\frac{1}{100}$  mgrm. T.R. was reached. No more marked increase in the number of lymphocytes was noticed than in the case of those with the lower dosage, and clinically an increase of temperature up to  $102^{\circ}$  F. was recorded by those patients who received these large doses. The cases that exhibited the desideratum, *viz.*, a lymphocytosis, without rise of temperature, were those who received series of doses ranging from  $\frac{1}{5000}$  to  $\frac{1}{1000}$  mgrm. T.R., and during the period over which the injections were spread no seizures occurred, and a marked lymphocytosis was a constant feature of their blood examination.

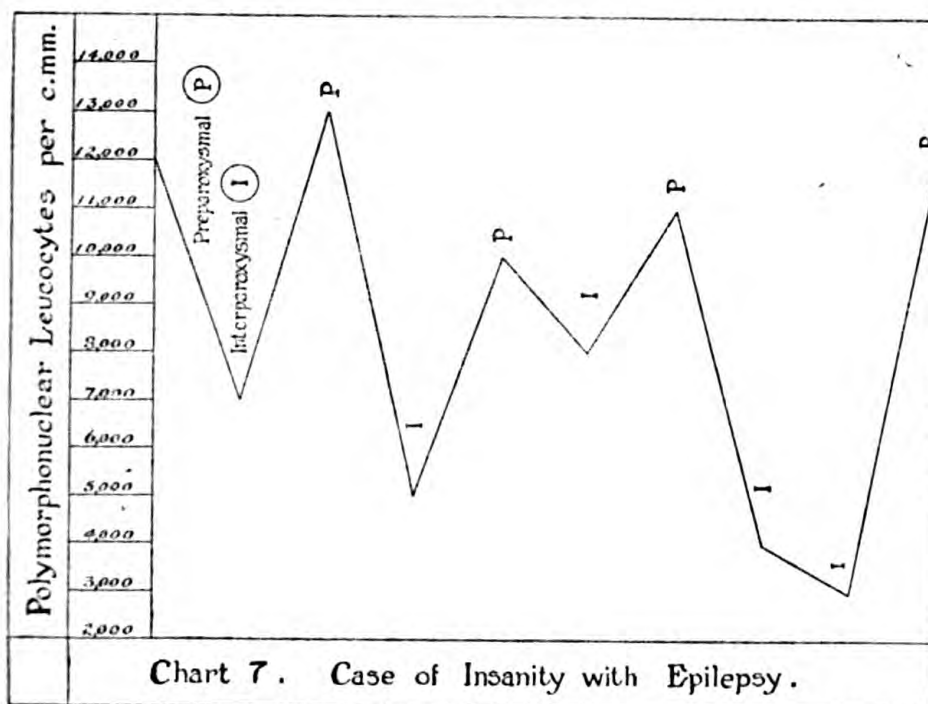
The next series of cases examined were epileptics. For the purpose of clinical observation each case, when the blood examination was carried out, was regarded either as being in a pre-paroxysmal or an inter-paroxysmal condition. Considerable difficulty was encountered in examining the blood of the patients in their pre-paroxysmal condition in order to obtain it sufficiently near the time of the fit to be of any clinical value, as many of the patients showed no indications of a seizure until a few moments before the fit, and thus rendering it impossible to obtain a blood specimen. However, a considerable number of cases were examined in the pre-paroxysmal period, where a fit followed in periods varying from a half to one and a half hours afterwards. The cases as a whole did not show a marked uniformity in their corresponding changes, as seen in their leucocytic picture. This may have been due to the unequal periods that elapsed in some of the cases between the taking of the blood specimen and the appearance of the fit. It was generally found, however, that a polynucleosis was present in the pre-paroxysmal period, whilst a marked fall was evident in the polymorphs during the inter-paroxysmal period. The case which exhibited the most constant change in the different states is shown in Chart 7. Examination of the chart shows a rise in the polymorphic curve in each of the pre-paroxysmal states, whilst there is a marked fall in the curve during the interparoxysmal periods.

A number of cases of dementia præcox examined exhibited

varying degrees of leucocytosis, with a tendency towards hypo-eosinophilia, but no marked similarity in the blood picture could be found amongst the cases. Many of them showed a similarity to the leucocytic type of manic-depressive cases, particularly when they were in a noisy or maniacal state.

All the cases of pure delusional insanity examined exhibited no variation from the usual leucocytic formula ; this was also seen in cases of terminal dementia.

Examinations of the blood in mental cases may therefore be



considered from two points of view—namely, as to whether they have a diagnostic and prognostic value, and whether they throw any light on the nature of the pathogenic agents causing the mental disturbance.

In regard to the first point it would seem from the researches of Sandri and Psanna-Salaris, and also from my own cases, that there is a clinically distinct form—acute confusional psychosis—which presents a constant and characteristic type of deviation from the normal leucocytic formula. They claim that this is so characteristic that this type of blood formula can be of importance in differentiating acute confusional psychoses from other psychoses, such as stuporose melancholia, or a confusional

episode initiating a psychosis of chronic character, *e.g.*, dementia præcox. My observations do not lead me to support this view in its entirety. It is true that all cases of acute confusional psychosis I examined presented an intense polynucleosis, diminution of lymphocytes, and an eosinophilia, and it is claimed that this is the characteristic formula of this disease. In many cases, however, of dementia præcox and manic-depressive insanity at the beginning of the disease, or when the morbid phase manifests itself, there exist alterations in the leucocytic formula, which, though smaller in degree, yet resemble closely that found in acute confusional insanity, so that all cases exhibiting a resemblance to the above formula must not necessarily be classified as belonging to the form of acute confusional insanity. From the diagnostic point of view, therefore, due caution and attention must be used in the correct interpretation of the leucocytic formula which each individual case may present.

From the prognostic point of view, those cases which present a fairly well-marked and continuous polynucleosis with an eosinophilia may be regarded as favourable, while the cases that present a long-continued low polymorphic count with a hypoeosinophilia may be regarded as unfavourable, and point towards chronicity.

As was pointed out in the early part of this paper, stimulation of the leucocytes by injections of substances like terebene tends to produce a leucocytosis and hasten the termination of the attack. It is a recognised fact that many intercurrent diseases which occur in the course of different psychoses have a favourable influence on the mental attack by their action in stimulating leucocytosis. Although terebene injections do certainly produce leucocytic stimulation, yet the reaction is not sufficiently strong, or the kind of leucocyte that has been called forth in response to the stimulus is not the one that may be "characteristic" for the disease in question. In many cases, however, due stimulation of the leucocytes by injections of terebene, etc., may prove of considerable value.

Hæmatological knowledge in the field of general clinical work and in experimental pathology leads to the conclusion that in mental disease also the leucocytic disequilibrium found is an expression of a toxic infection, or of an acute or subacute intoxication. It is difficult to establish the nature of this

infective or toxic agent, its importance, and its mode of action in determining the causation of mental disease, and the relationship between the blood change and mental state on one hand, and the nature of the infection on the other.

Sandri suggests that in the case of confusional psychoses the pyogenic micro-organisms normally inhabiting the intestine produce in particular morbid conditions abnormal quantities of toxins, which by invading the organism may be the cause of the attack, and give rise to the hæmatological changes which have been described. But to understand how this pyogenetic intoxication, in many cases, runs its course without any psychic disturbance, while in others it gives rise to severe mental crises, it is necessary to suppose, as is pointed out in the earlier part of this paper, the concurrence of a complex of morbigenic conditions that have prepared the ground—in fact all those commonly regarded as ætiological factors.

Pardœ considers that the exacerbations of manic-depressive psychoses are caused by crises of intestinal auto-intoxication.

Since the blood reaction in the sense of leucocytosis and polynucleosis is common to a great number of toxic infections and intoxications, it would not be illogical to suppose that the true and essential cause of the psychoses also produces the disequilibrium of the blood.

All these points lead to the supposition that mental disorder is only a mode of manifestation of cerebral disturbance consequent upon a general morbid alteration of the organism. This supposition, as Graziani points out, does not suffice of itself to clear up the various points of this complex and obscure problem, for the solution of which further researches in the chemico-biological properties of blood would be of assistance, especially if they were conducted simultaneously with a general study of metabolism.

### *Conclusions.*

- (1) That cases of acute confusional insanity present a fairly well marked picture, namely, a polynucleosis and eosinophilia.
- (2) That cases of manic-depressive insanity and dementia præcox show variations in the leucocytic formula resembling (1), but not so well marked nor so constant.
- (3) That a continuous polynucleosis and eosinophilia point



towards recovery, and absence of polynucleosis and hypoeosinophilia point towards chronicity.

(4) That recovery may be hastened by stimulation of the leucocytes by terebene, etc.

(5) That the remission stages of general paralysis are characterised by lymphocytosis, and seizures by polynucleosis.

(6) That remissions in general paralysis may be prolonged by suitable doses of tuberculin.

(7) That cases of delusional insanity and terminal dementia do not exhibit a leucocytosis.

(8) That epileptics show a polynucleosis in their pre-paroxysmal condition, and a diminution in the leucocytes in their inter-paroxysmal state.

I am indebted to Dr. Grills, Medical Superintendent, County Asylum, Chester, for permission to include a number of the cases which I investigated whilst there, and also for information regarding the progress of these cases since.

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(<sup>1</sup>) A paper read at the Autumn Meeting of the South-Western Division held at the Devon County Asylum, Exminster, on October 24th, 1913.

*The Albumen in the Cerebro-Spinal Fluid in Cases of Mental Disease*<sup>(1)</sup>. By H. D. MACPHAIL, M.A., M.D., Senior Assistant Medical Officer, City Asylum, Gosforth, Newcastle-upon-Tyne.

THE following short paper is based upon observations made during the examination of the cerebro-spinal fluid from a series of cases of various forms of mental disorder. A good deal of attention has recently been paid to the examination of this fluid in conditions of disease; there have been numerous observers, and several important tests have been devised. In this series of cases a routine examination was followed in every case, which embraced the tests described by Noguchi, and by Ross and Jones, an examination of the cells present, and an estimation of the amount of albumen in the fluid. It is to the last of these methods of examination only that attention is directed in this paper.

Esbach's albuminometer was the instrument used to estimate the amount of albumen present. This instrument is easily employed for the estimation of the amount of albumen present in the urine, but the first difficulty that is encountered in the case of the cerebro-spinal fluid is that the amount of fluid available is so small. In testing the urine, 11 c.c. of urine are taken, and the reagent added to this; but in doing a lumbar puncture it is not advisable to remove more fluid than 10 c.c., except in cases where the pressure is increased; and, as a rule, in cases of mental disease any increase of pressure which occurs is comparatively slight. So that, even if all the fluid obtained by puncture were used, it would not be sufficient for the test; and of course it is always desirable to reserve some of the fluid for other tests. For these reasons, instead of using 11 c.c. of fluid, 5.5 c.c. were used, and to this quantity were added 5.5 c.c. of distilled water; then to this mixture the reagent was added. If the actual amount of albumen shown by this method be doubled, we get the amount of albumen present in the fluid in terms of the scale on the albuminometer.

There is another difficulty, and that is that the amount of albumen present in the fluid is frequently very small: in such cases it is difficult to estimate it exactly, and the results given

are therefore approximate ; but sufficiently accurate information for purposes of comparison is obtainable.

The observations were made upon the results of the examination of the fluid taken from seventy-seven patients. This list was composed of various clinical types, including general paralytics, cases of gross brain lesions, and cases of mental disorder, following such ætiological factors as alcoholism, plumbism, and various nervous disorders, as well as cases of what appeared to be pure functional disorder. In some of the general paralytics a second examination was made after the lapse of three months. As one might expect from such various types of mental disorder, the results of the examination differed greatly from each other, some of the fluids showing marked pathological changes, others showing little deviation from the normal.

The amount of albumen present in the various cases was found to vary within wide limits, the lowest being *'03 per cent.* and the highest *'3 per cent.* In general paralysis the amount of albumen was always increased ; in most of the cases it was *'1 per cent.* or over. In one case it was as high as *'3 per cent.*, and in another *'2 per cent.* In only one case of general paralysis was the amount below *'05 per cent.*; here it was *'03 per cent.* on the first examination and *'04 per cent.* three months subsequently. It is interesting to note that in this case, although the signs were well marked, the disease was non-progressive. In the cases of general paralysis where the amount was not much over *'05 per cent.* the disease was, as a rule, stationary. In advanced cases the amount was always greatly increased. Those with a marked increase always gave a positive reaction to the tests of Noguchi, and of Ross and Jones ; and when Noguchi's test was negative, or at least not definitely positive, the amount of albumen was as a rule not higher than *'05 per cent.* Excess of albumen and a high cell-count go together. In cases of organic dementia the amount as a rule was *'05 per cent.*, and the same quantity was usually found in alcoholic dementia. In one of the cases following on lead-poisoning the amount was *'075 per cent.* In purely functional cases it is rare to get an amount in excess of *'05 per cent.* In a case of imbecility following congenital syphilis there was no increase.

The results obtained in this series of cases are very interesting, and would appear to give quite definite information. An excess

of albumen indicates profound change in the central nervous system, and the greater the percentage of albumen the more pronounced is the change. General paralysis always shows an increase, and in this disease the amount is usually very great; and the greater the amount the worse is the immediate prognosis, while in those cases with a slighter increase the immediate prognosis is better. In other cases it is in those of a graver nature that a large excess is got, and the greater the amount present the more serious is the condition of the patient.

It will thus be seen that a quantitative estimation of albumen is of the greatest importance in the examination of the fluid from any case of mental disorder, and that this test alone conveys very definite information with regard to diagnosis and prognosis. The amount present appears to be in direct proportion to the gravity of the condition of the patient.

This test is of value in all classes of mental cases, as even in functional cases a large increase of albumen was found only in those where the prognosis was bad. In this respect this test differs from the others which are applied to the fluid. The usual tests give positive information in such serious disorders as general paralysis, while the information they give in functional cases is usually of a negative nature only. This test, on the other hand, gives definite information in all classes of mental disorder. A percentage of '05 appears to be the dividing line as regards an estimation of the amount of damage done to the nervous tissue. If the amount is above this the prognosis is bad; if below this the amount of damage done may be compatible with the patient's recovering—at least partially. If the amount is '1 *per cent.* or over, the case is almost certainly one of general paralysis, whereas if the amount is as low as '03 *per cent.* there is quite possibly no marked change in the nervous tissue.

(1) A paper read at the Autumn Meeting of the Northern and Midland Division, held at the Borough Mental Hospital, Leicester, on October 24th, 1913.



*Some Features of the Recent Outbreak of Enteric Fever at Omagh District Asylum*<sup>(1)</sup>. By PATRICK O'DOHERTY, B.A., M.B., B.Ch., Assistant Medical Officer, District Asylum, Omagh.

THOUGH the subject of enteric fever would not seem to come within the purview of this Association, yet special features, mental and otherwise, of the outbreak in Omagh Asylum in the end of last year prompted me to put some of the facts before the members of the Irish Division. They will pardon me if they find my remarks rather bald, being mere records of observations, but I hope they will not be altogether uninteresting.

The history of enteric in Omagh Asylum dates back, as far as I learn, some fifteen or sixteen years, during which period it might be described as endemic. In 1895-96 a very formidable outbreak occurred, rivalling in many ways the recent one. At that time the buildings were in course of reconstruction, and the whole sewage system was remodelled and renewed. Since 1900, from which date only has a record been kept, no single year has been free from enteric, and in the decade ending 1909, 67 cases are recorded. The majority of these occurred in 1905, 1906, and 1907, when there were 44 cases. On that and on previous occasions the cause was investigated, but without definite result. During 1908, 1909 and 1910 there was a lull, when only 8 cases are recorded, and hopes were raised that we were about to get rid of the scourge. Two cases only occurred in the early months of 1911, but with the advent of October we were made to realise that the dreaded microbe of Eberth was still in full vitality in our midst, and that it still found the surroundings congenial and the pasture good.

During the succeeding three months no fewer than 92 cases occurred, and these, with 4 occurring in the first month of this year, brought the total to 96. Of these 69 were patients (49 males and 20 females), 10 of the male staff (including 4 artisans), 11 nurses, and 6 cases in the asylum surroundings, but not of the staff. The chief incidence was on the male side, where 59 cases occurred; October was our worst month, when 55 were attacked. Twenty-eight occurred in November and 7 in December. The first two cases occurred in the last



few days of September, when it will be remembered there was a break-up of the long drought—a matter of some significance, as will be seen later. The deaths numbered 17, 16 patients and 1 nurse, giving a total mortality of about 17 *per cent.*—24 *per cent.* of the male patients, 20 *per cent.* of the female.

The type and severity of the attacks varied widely. Rose spots and diarrhoea were not prominent features; enlarged spleens were frequent, and the complications ran the whole gamut, pneumonia, thrombosis of femoral vein, perforation, and hæmorrhage heading the list. There was one instance each of parotitis, periostitis of tibia, spondylitis, cystitis, thrombosis of the mesenteric veins, and of subcutaneous abscess. Two cases had pulmonary tuberculosis as sequelæ, but whether the disease existed before or was consequent to the enteric, I am not prepared to say. One case ran an apyrexial course throughout, and on this I shall remark later; a few cases had hyperpyrexia; one of these had a temperature of 107° F. and died of profound toxæmia.

Of the 17 deaths the immediate causes were in 6 cases toxæmia and heart failure, in 4 pneumonia, in 3 perforation, in 3 hæmorrhage from bowel, and in 1 thrombosis of mesenteric veins. In 5 cases we were able to have *post-mortem* examinations; in 2 of them perforation was found, in 2 pneumonia, and in 1 thrombosis of mesenteric veins. In a sixth case, which afterwards died of pulmonary tuberculosis, the scarring of the intestinal ulceration was seen, and a curious plastic peritonitis.

Out of a total of 22 male epileptics on the register, 7 were attacked; of these 5 died. It is to be remarked, however, that in addition there were 3 other cases of patients from the same division and 3 attendants. No female epileptics were attacked, and a curious thing I observed was that no fits occurred during the course of the disease, though previously to their illness some of the men were having as many as 100 fits in a month.

The ages of the patients varied from nineteen to seventy-seven, and though the deaths were more numerous amongst the younger ones, relative to their number the older patients showed the greater mortality.

The general treatment adopted was the usual one—nursing and milk diet. Many of the cases needed no medicinal treat-

ment. Some were given quinine alone, some salol, and others Murchison's quinine chl. mixture. Our observations did not point to the superiority of any particular drug.

As to diagnostic methods, a few points are worth dwelling on. The Widal test was done in six cases; three of these gave a negative reaction and three positive. The first case of the epidemic—a male patient—was taken ill on September 26th. He presented equivocal signs, and was variously diagnosed as gall-bladder trouble with jaundice, and appendicitis. Not till the fourth week was enteric diagnosed. Widal gave a negative reaction; as it happened he died on the same day that a blood specimen was taken, and a *post-mortem* showed typical typhoid ulcers with perforation. Early in the epidemic we began to employ the Russo-urine test, and, as results showed, it proved most valuable. In all, 74 enteric urines were examined, with only 9 negative results. The Diazo reaction was much less valuable in our hands; out of the same number (74) of urines, 23 were negative. One case especially showed the value of the Russo test—the apyrexial one mentioned above; this man showed the usual symptoms in a mild form, but with normal temperature; medical opinion was divided as to the diagnosis. Russo test was done during the first week and proved positive, while Diazo test was negative. On the fifteenth day the serum gave a positive Widal, which removed any doubt as to the diagnosis of enteric. This case ran a normal course, and was convalescent in the fifth week.

To find the cause for such a formidable outbreak naturally engaged our anxious attention, and for a time it baffled our inquiries. There was no enteric in the neighbourhood, and the patients attacked were not new admissions, nor were we able to fix on any individual as a likely typhoid carrier. The milk and water supply were naturally suspected. We derive our milk from three sources, the asylum farm and two contractors, but we found no reason to suspect any of the three, and samples of the milk submitted for analysis were found to be bacteriologically pure. Our water supply is derived from a deep well sunk in close proximity to the laundry buildings for a depth of 80 ft., and penetrating the limestone rock for some distance. It is lined with cement-pointed brick for the greater part of its depth, and afforded an ample supply for ordinary drinking,

culinary and bathing purposes; a softer water derived from the river is used in the laundry. This well had hitherto been considered to be above suspicion, nevertheless we took the precaution of having the water boiled as far as it was possible and had it examined bacteriologically. The bacteriologist reported it free from typhoid bacilli and all sewage organisms. This was early in November. Later, an engineer was employed to test the drains and inquire generally into the sanitary arrangements. The drains, newly laid fifteen years ago, were found to be in a bad way; nearly all the branch drains were leaking, though the internal plumbing was staunch in every detail. He took three samples from the well—of the water itself, of the matter found oozing through the brickwork, and from the rock below. All three were submitted to the bacteriologist; no typhoid bacilli were found, but all three contained *B. coli* in large numbers, and one of them *B. enteritidis sporogenes*. Recent pollution by excremental matter was indicated by the presence of *B. coli*, and the presence of *B. enteritidis*, which is a sporing organism, indicated pollution that may not have been recent.

The failure to find the *B. typhosus*, which is notoriously elusive in such bacterial mixtures as naturally exist in the soil, was in no way consolatory, as nowadays indirect evidence as to its possible presence is sufficient to condemn a water. From that time there was no doubt in my mind that the water was the cause of the outbreak, and, moreover, had been the cause of all our trouble in recent years. Needless to say we ceased to use the well, and fortunately were able to obtain the town supply, which is laid on to the asylum, but only used in emergencies. The time of the year, just as a prolonged drought was breaking up, and when considerable movements of the surface and subsoil waters were taking place, and the widespread nature of the epidemic over every portion of the asylum, went further to point to the water as a cause, and, curiously enough, before we suspected the well, an attendant volunteered the information that all the patients attacked in his division were noted water-drinkers.

Several propositions as to the cleaning of the well with a view to its further use were made, but ultimately more sane advice prevailed: an ocular demonstration of surface water forcing its way through the brickwork of the sides and trickling down in large amounts finally determined the Committee

to abandon the well altogether. This has been done, and an artesian boring is being made at another site.

The Committee have also undertaken the relaying of the defective sewers, which is now well under way, and the laying open of these justified in every way the evidence of leakage as given by the preliminary tests. Whole lines of pipes were cracked, especially at the joints. The engineer and workmen explain this as due to the expansion of the Portland cement used in making the joints, also to the large amount of water at high temperatures, often little short of boiling-point, entering the sewers. The pipes were in some cases improperly laid. The new drains are in some cases metal, but mostly of good quality stoneware laid on and embedded in Portland cement, and all the joints are made with Medina cement. In many cases exhaust steam also had gained entrance to the sewers, and in one instance could be seen issuing from a ventilator near a window where some attendants slept. It is interesting to note that in this location—a passage between blocks—no less than six cases occurred. We were inclined to attribute some importance to this fact before we discovered that the well was polluted; a case having some bearing on this is given by Sir Wm. Whitla, where exhaust steam having access to a drain forced the traps and gained an entrance to a Hospital ward, filling it with moist vapour, an outbreak of enteric occurring shortly afterwards.

Two other points alone remain, *viz.*, the effect the fever had on the mental condition of a number of the patients, and secondly, the deterrent effect the epidemic had on the minds of the public, resulting in a diminished admission-rate. Out of the total of 53 patients (leaving the deaths out of the count), 20 showed appreciable mental improvement. Of these 13 were discharged recovered within a few months of their illness, three went home relieved, and four remained in the house, but improved. Of those discharged one only has returned up to the time of writing, while two of those remaining relapsed. These cases were mainly adolescents, and had been in the asylum for periods varying from five months to seven and a half years; five of them were recurrent cases, chiefly maniacal and melancholic, one was a case of primary dementia, who did not recover, and one of delusional insanity. This latter case is of special interest; he had been in the asylum for seven and a half years,



his delusions seemed fixed, and he was to all intents and purposes chronic; another case looked on as chronic melancholia had been a patient for two and a half years.

I do not wish to unduly urge this point, as the improvement or recovery in many of the cases may prove to be merely temporary, as has been the case in three of the known cases, but that such improvement as did occur can be directly attributed to the fever does not admit of any reasonable doubt. And this question occurred to me: Could the careful dieting, etc., to which they were submitted over long periods have had any bearing on the matter? I should be glad to know if any other member has had any similar experience, or has read of such.

As to the second point, the decrease in admissions was quite remarkable. During the six months preceding the outbreak, April to September, 1911, the monthly average was 17, as was the monthly average for the whole year, 1911. During the months October, 1911, to March, 1912—the enteric period—the monthly average had fallen to 12. Since April the numbers are again increasing, and the average for the three months, April to June, has been 20. The net result has been that during the six months ending April 17th there was a reduction in the numbers in the house of 34. The deaths from enteric and the discharges would partly account for this, but not wholly. The numbers are again approaching their original figure.

As to the general aspect of such an epidemic as this, one has to actually experience it to realise the amount of confusion it entails, for not only had we to nurse and care for those of the staff who were stricken, but their places had to be taken by raw hands unaccustomed to the work, and in some cases reluctant to come in at all. On the female side this was most felt, as almost a third of the staff were down at the same time. In addition there was the difficulty of providing accommodation for the six or seven trained nurses in an already overcrowded asylum.

It must be said as a tribute to our staff that all responded willingly to the strain put on them, and merited the highest praise. In conclusion, I have to thank my Superintendent for permission to make use of the information herein set forth, and you for your patient hearing.

(<sup>1</sup>) A paper read at the Summer Meeting of the Irish Division held at the Derry District Asylum on July 2nd, 1912.

LX.

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*The Pupil and its Reflexes in Insanity.* By A. H. FIRTH,  
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PART I.—INTRODUCTION.

IN the year 1850, Baillarger published an account of a new symptom which he had frequently observed in general paralysis, namely, inequality of the pupils.

Seifert, in 1853, writing on "Disturbances of the Mobility of the Iris in the Insane," pointed out that in the majority of instances cases of acute mania with miosis sooner or later developed definite signs of general paralysis.

In 1869, Argyll Robertson published his discovery that in spinal miosis the pupil contracts with convergence, but fails to contract on exposure of the eye to light. This marks an epoch in the history of the investigation of pupillary symptoms. Since then numerous observers have contributed to make the literature of the subject of vast extent. The condition of the pupil in organic nervous diseases has been closely investigated, and a good deal of attention has been given to the changes which it may undergo in so-called functional disorders of the nervous system and in mental diseases.

In the present instance the pupillary anomalies which occur in insanity are discussed from the clinical standpoint. A description of the pupil and its reactions in health is given in the first place ; next there follows a general account of the pathological variations that may be met with ; lastly, the incidence of pupillary symptoms in certain types of mental disorder is considered, with reference both to published records and to the writer's own observations.

### THE PUPIL IN HEALTH.

The pupils are circular in outline, and of the same diameter in both eyes. When a change in size takes place the pupil remains circular, concentric with its former phase. As a rule the position of the pupil is not quite central with respect to the cornea, but slightly displaced inwards.

The pupils retain their equality under all conditions of illumination, accommodation, and convergence.

Slight variations from the circular form are of frequent occurrence, especially in association with small pupils, and such variations are to be regarded as physiological. Occasionally in otherwise normal eyes the position of the pupil is found to differ slightly from that above described. Schirmer (quot. Bach (2), p. 36) examined the effect of different strengths of illumination on the pupils of a number of healthy young adults, allowing sufficient time for complete adaptation ; he found that the diameter in each case remained practically constant for degrees of illumination ranging between 100 and 1100 metre-candles. This " physiological diameter " measured from  $2\frac{3}{4}$  to  $4\frac{3}{4}$  mm.

Age has a certain influence on the size of the pupils. The maximum diameter is reached before the age of twenty ; the size does not undergo much change between twenty and fifty, but thereafter it diminishes.

In hypermetropic eyes the pupil on the average is smaller than in emmetropic eyes ; in myopic eyes it is larger. In sleep the pupils are small ; on wakening they dilate widely, and do not assume their usual size until some time after consciousness is fully established. Light falling on the eyes does not prevent the preliminary dilatation.

## PHYSIOLOGICAL REFLEXES.

(1) *The light reflex.*—If the intensity of the light which falls on the retina is suddenly increased, there is produced, after a latent period of about half a second, a marked contraction of the pupil; this is usually followed by slight dilatation, and again by contraction, and so on, until, after a series of rapidly diminishing oscillations, the pupil finally assumes a state of contraction. If the increased illumination persists, the contraction is well maintained for some time. It will tend to disappear as the eye adapts itself to the new intensity of lighting.

(2) *The consensual light reflex.*—If one eye alone be illuminated the pupil of the other eye contracts equally with its fellow, though the diminution in size is not so marked as in the case where both eyes are illuminated. Hence, when light is falling on both eyes, the shading of one eye is followed by a dilatation of both pupils.

Many authorities maintain that unequal lighting of the eyes causes a slight difference in the size of the pupils, the more brightly illuminated eye having the smaller pupil.

(3) *Reflex dilatation of the pupil from sensory and psychical stimuli.*—Painful stimulation of any sensory nerve causes both pupils to dilate; a deep needle-prick in the skin may cause an increase in size of more than 3 mm. (Bumke (8)). Further, every sense-impression that reaches the brain from the periphery, every sudden stimulation of the tactile, muscular, or special senses, produces a widening of the pupils. Actual sensation is not necessary for the production of this reflex; stimulation of an anæsthetic area of skin is followed by reflex pupil-dilatation if the anæsthesia is due to a central lesion or to hysteria, but the reaction cannot be produced if the anæsthesia is due to a peripheral lesion.

A similar reaction is caused by psychical stimuli; for instance, by excitement, anger, fear, or any strong emotion, by every volitional impulse, and every effort of attention. The impulse to dilatation resulting from such sensory or psychical stimuli is stronger than the strongest contracting stimulus from light (Bach (2), p. 73).

(4) *Pupillary unrest.*—Much attention has been given to this phenomenon by German observers. Bach describes it as follows :

"The size of the pupil in man in the waking state normally undergoes almost continual variations. These constant oscillations, which differ in character, in time, in amplitude, and in rapidity, show no synchronism with the action of the heart or the respiratory movements, and are independent of the variations of blood-pressure. Their action is apparently quite irregular; now one sees two or three oscillations in quick sequence, then a pause of one or two seconds, and again there follows a long series of oscillations at fairly regular intervals. These oscillations of the pupil, for which Laqueur introduced the apt title of 'Pupillenunruhe' (pupillary unrest), can be observed by the naked eye both in daylight, and especially in the dark-room with oblique illumination. They are most clearly perceptible in medium-sized pupils. For more accurate study, and especially for the observation of pathological conditions, examination with the Zehender-Westien loupe, or with the Zeiss corneal microscope is recommended." The amplitude of the movements of pupillary unrest, when powerful sensory and psychical stimuli are as far as possible avoided, is not more than about  $\frac{1}{4}$  mm. on the average. They are equal and simultaneous in both eyes and occur from 30 to 120 times per minute. There is a difference of opinion as to the causation of these movements, but in the words of Ballantyne (3), there is every reason to believe that all the various stimuli which influence the normal pupil play a part in the production of these physiological oscillations, and that they are the resultant of the many influences, exciting and inhibitory (if there be such), passing to the iris *via* the third nerve and the sympathetic.

It is important to draw a distinction between physiological pupillary unrest and the pathological condition known as "hippus," in which the oscillations are very large, and easily seen, amounting to 2 or 3 mm.

(5) *Reaction of the pupils in near vision.*—If one is gazing into the distance, and the eyes are then directed to a near object, the pupils contract. In general the near object must be not more than 40 cm. from the face in order that an appreciable contraction may take place, and the contraction is more marked if the object be nearer. As a rule the maximum degree of contraction is elicited when the fixation-object is within about 10 cm. from the eyes. The amplitude of the contraction varies between  $\frac{1}{4}$  and 3 mm. in different persons, seldom exceeding the



latter amount (Bach (2)). The contraction takes place equally in both eyes, and independently of the degree of illumination.

(6) *The lid-closure or orbicularis reflex.*—Forcible contraction of the orbicularis palpebrarum is accompanied by narrowing of the pupils. The observer should ask the patient to close the eyes firmly, while he himself holds apart the lids of one eye. It is important to bear this reaction in mind when one is attempting to examine the pupil-reactions of a refractory patient.

(7) *The galvanic pupil-reflex.*—A galvanic battery is arranged so as to send a weak current through the body, one pole being applied over the eye or on the temple close to the eye. With a suitable strength of current, closing or opening the circuit produces the sensation of light and contraction of both pupils. Closure of the circuit, the ocular pole being the anode, gives these effects with the smallest current. It is found that the minimum strength of current necessary to produce the light-sensation is less than that necessary to produce pupil-contraction, and that a fairly constant ratio exists between these values. In healthy subjects the proportion ranges between 1 : 1.5 and 1 : 4.0 (Bumke (8)).

(8) *The trigeminus-facial reflex.*—This reaction may be elicited by firm pressure on the skin at the external canthus, or by pricking the skin of the cheek with a needle for about half a minute. Both pupils dilate, and then quickly resume their former state; if the stimulation be continued, a gradual dilatation again takes place, which persists for about two minutes, and is followed by a slow contraction. When the stimulus ceases, the pupils resume their original size. The same reaction may follow tactile, thermic, or electrical stimulation of the eyelid, conjunctiva or cornea; but interference with the conjunctiva or cornea is much more likely to cause reflex closure of the eyelids, with miosis.

There is apparently an interplay of two impulses—one tending to dilatation of the pupils, and the other to reflex closure of the lids and miosis (Bach (2)).

#### ANOMALIES OF THE PUPIL AND ITS REACTIONS.

##### (1) *Irregularity and Eccentricity of the Pupil.*

The pupils of healthy persons have a circular outline in the



great majority of cases ; but slight variations from the round form are of frequent occurrence, and are to be regarded as physiological.

The pupil is usually not quite concentric with the cornea, but slightly displaced inwards. Slight variations from this location are sometimes found in otherwise normal eyes.

Congenital eccentricity of the pupil of marked degree is occasionally met with ; such a condition is usually known as *ectopia pupillæ*, or *corectopia*. It is convenient to employ the term "*corectopia*" in a wider sense, signifying any variation from the normal position of the pupil, whether marked or slight, whether of congenital origin or acquired in the course of disease.

Variations in the form or situation of the pupil may occur in diseases of the nervous system (including the psychoses). Such variations may be slight or marked ; they may occur merely as transient symptoms or as more or less permanent conditions.

Irregularity of the pupil-margin may assume different forms ; for instance, the pupil may be crenated, partly circular and partly angular, partly circular and partly rectilinear, polygonal, elliptic, oval, or pear-shaped. It is important to remember that distortion of the pupil may be of congenital origin ; it may be caused by past or present local disease of the eye, such as *iritis* or *glaucoma* ; or it may be a result of injury or surgical operation. Incomplete absorption of a mydriatic may occasionally cause a temporary deformity. In order to exclude irregularities due to *synechiæ* the eye should be examined under oblique illumination, and (in suitable cases) with the aid of a mydriatic.

The following extracts are taken from quotations in an article by J. Piltz (22) on the diagnostic value of irregularities of the pupil.

(a) Zieminski collected 207 cases of mental disturbance in which the pupils were irregular. These consisted of 198 general paralytics (including 15 cases of so-called alcoholic paralysis, and 2 of paralysis originating from lead-poisoning), 1 case of epilepsy, 5 of neurasthenia, and 3 of hysteria. He also observed that irregularity of the pupil may be an early symptom of general paralysis, present sometimes even in the premonitory stage.

(b) Marandon de Montyel concludes that irregularity of the

pupil-margin is practically a never-failing phenomenon in general paralysis, and that, moreover, it may occur in all other types of insanity.

(c) Joffroy and Schrameck believe that irregularity in the contour of the pupils indicates paralysis progressiva, tabes dorsalis, or lues; further, that this is as important as the Argyll Robertson symptom, and, indeed, forms its initial stage.

(d) In association with irregularity of the pupil, Salgo drew attention to unsymmetrical movement of the iris—that is, alteration in the contour of the pupil when its size changes. Different divisions of the iris show retardation or sluggishness of action in different phases of the movement—for instance, in the light-reflex contraction. He found this symptom chiefly in general paralysis; though it is not pathognomonic of the disease, he regards it as a very important sign, because in early cases it may be the sole physical evidence of commencing degeneration of the brain.

Piltz notes that different portions of the iris may show sluggishness of movement on different occasions of observation. He saw this change very often in progressive paralysis, and also in katatonia.

Piltz himself arrived at the following conclusions :

(1) There may exist the following pathological alterations of the pupil-margin :

(a) Temporary or changing irregularities, which are caused by a varying unsymmetrical movement of single portions of the iris.

(b) Disturbances of the position of the pupil.

(c) Constant irregularities of the pupil-margin.

(2) All these changes are very frequently observed in paralysis progressiva, tabes dorsalis, and lues cerebro-spinalis.

(3) Sometimes these derangements occur in the course of other nervous and mental diseases, but they are only exceptionally observed in healthy people.

(4) Transitory or changing unsymmetrical movement of portions of the iris is occasionally to be seen in katatonia.

(5) As irregularities of the pupil-margin sometimes precede the development of the Argyll Robertson symptom, they have considerable diagnostic importance (Piltz (22)).

Moeli sometimes found in chronic alcoholic patients that

only certain portions of the iris retained their mobility (Bumke (8)).

Albrand (1) has recorded eccentricity and irregularity of the pupil in cases of dementia præcox. His observations will be given later.

(2) *Mydriasis, Miosis, Anisocoria.*

Under physiological conditions the size of the pupils may vary within wide limits in different persons ; in each individual during the waking state the size of the pupil is subject, as we have seen, to constant variations. Hence it is sometimes difficult to decide, in a given case, whether the pupil-diameter is to be regarded as physiological or pathological.

Increase in the size of the pupil may be due to irritation of the pupil-dilating mechanism (spastic mydriasis), or to paralysis of the pupil-contracting mechanism (paralytic mydriasis).

Similarly, decrease in the size of the pupil may be due to irritation of the pupil-contracting mechanism (spastic miosis), or to paralysis of the pupil-dilating mechanism (paralytic miosis).

A discussion of the various lesions which may produce change in the size of one or of both pupils will not be entered upon. In the examination of insane patients, the observer must bear in mind the possible existence of disturbing factors. He must exclude such conditions as aneurysm of the aortic arch, tumour growth in the neck, diseases of the lung and pleura, cerebral tumour, hæmorrhage and softening, meningitis and syringomyelia. Fallacy may arise from the local application of mydriatics or miotics, or from the administration in other ways of substances which produce change in the size of the pupils.

Spastic miosis may be set up in one eye by local disease or irritation—for example, iritis, or a foreign body on the cornea. Miosis may also occur as an accompaniment of prolonged accommodative effort and spasm of the accommodation.

Mydriasis or miosis may be present in both eyes, or in one eye only ; or the symptom may be more marked in one eye than in the other. The following remarks have special reference to bilateral conditions.

Spastic mydriasis is found in cases of psychical excitement, and in the acute psychoses generally.

Paralytic mydriasis occurs during epileptic seizures, and sometimes in tabes, general paralysis, and cerebro-spinal syphilis. Mydriasis often accompanies exhaustion, fatigue, and anæmia; it may be found in hysteria and neurasthenia, and sometimes in migraine (on the affected side).

Paralytic miosis is met with in tabes and general paralysis.

Very small pupils are occasionally seen in senility and senile dementia.

Bumke (8) found that the pupil diameter in patients at the Freiburg Psychiatric Clinic was on the average larger than the physiological diameter ( $2\frac{3}{4}$  to  $4\frac{3}{4}$  mm.), and varied between  $3\frac{1}{2}$  and 6 mm.

Bumke also observed that insane patients who had been refusing food before admission to the asylum showed maximal mydriasis, and somewhat sluggish light-reflexes; whereas, after artificial feeding had been used for some days, they showed normal innervation of the iris. He also carried out observations on a number of asylum night-attendants, and found that their pupils were wider in the morning following a night spent on duty than they were at the same hour on other days, and in the evening before going on duty. At the same time, the reaction to sensory stimuli was usually much more active, and the movements of pupillary unrest had a greater amplitude.

Inequality of the pupils—*anisocoria*—is easily detected, a difference in diameter of  $\frac{1}{4}$  mm. being readily appreciated. *Anisocoria* without impairment of the pupillary reactions is not necessarily a serious symptom, for it may occur in healthy persons. Here the difference is usually not more than  $\frac{1}{2}$  mm., and rarely as much as 1 mm.; the inequality persists in all states of illumination and convergence. Inequality of the pupils, associated with change in the pupil-reactions, may be taken as evidence of an organic lesion (Ballantyne (3)).

*Anisocoria* was found by Bierhoff in 188 out of 7,300 patients at the Marburg Eye-Clinic, that is, in about 2.6 *per cent.* (cases of glaucoma, trauma, and local inflammation were excluded). A congenital origin was assigned in 60 cases (Bach (2)).

Inequality of the pupils may be an expression of difference in the kind or degree of refractive error in the two eyes. Bierhoff found *anisometropia* to be the cause in 6 of his 188 cases of *anisocoria*.



Inequality of the pupils occurs in many organic nervous diseases, and also in functional disorders ; the condition may be transient, constant, or subject to change. The degree of anisocoria may vary from day to day, or even from hour to hour. The size-relation of the pupils may alternate ; at one time the right pupil may be the larger, at another time the left. This phenomenon has been named "*see-saw*" or "*dancing*" pupils. Three groups of cases are included under the term "see-saw pupils."

(1) Cases in which the size-relation of the pupils is reversed at longer or shorter intervals, it may be from day to day or from hour to hour ; usually the intervals are irregular ; most frequently each pupil becomes dilated in turn (springende Mydriasis). This symptom was first noticed in tabes and general paralysis, but it has recently been discovered to exist in apparently healthy subjects, and in cases of hysteria, neurasthenia, senile dementia, arterio-sclerosis, neuralgia, epilepsy, and other diseases.

(2) Cases in which one pupil undergoes change of size according to illumination, etc., becoming at one time larger, at another time smaller than its fellow, which remains fixed. The symptom here depends on unilateral paralysis of the sphincter pupillæ.

(3) Cases in which one pupil is normal, but the other undergoes notable changes of size, independently of illumination and convergence, so that it is now larger, now smaller than its neighbour. This condition is allied to hippus (Bach (2)).

### (3) *Hippus*.

Even in healthy persons changes of the pupil-diameter amounting to as much as 2 mm. may occur as part of the normal pupillary unrest ; in hysterical and neurasthenic subjects and nervous children such variations are by no means rare (Bach (2)). True hippus consists in rhythmic movements of the iris, with an average period of from 1 to 3 seconds ; they have an average amplitude of 2 or 3 mm., and are independent of illumination, convergence, and sensory and psychical stimuli.

Hippus is sometimes observed as an independent symptom in tabes and general paralysis, as a forerunner of the Argyll

Robertson pupil. It has also been seen in certain stages of the epileptic seizure, and in post-epileptic confusion; it may occur in the seizures of general paralysis.

#### (4) *Amaurotic Rigidity of the Pupil.*

When a lesion causes unilateral loss of function of the retina or optic nerve, for instance, on the right side, neither pupil reacts to illumination of the right eye, but illumination of the left eye elicits contraction of both pupils. The other pupillary reflexes are not disturbed. Mydriatics and miotics have their customary effect on the pupil.

If the lesion causes bilateral loss of function, neither pupil reacts to light directly or consensually.

If the function of the retina or optic nerve is only partially affected, there is diminution instead of loss of the light-reflex.

In rare cases there may be loss of the light-reflex though vision is preserved, or there may be amaurosis without loss of the light-reflex.

#### (5) *Hemiopic Pupil Rigidity.*

This has been said to occur in association with homonymous hemianopsia, as the result of a lesion of one optic tract. Published observations of its occurrence have lately been subjected to much criticism.

#### (6) *Absolute Rigidity of the Pupil.*

The term "absolute" rigidity is used in contrast to "reflex" rigidity, and not in opposition to "partial" rigidity. In absolute pupil-rigidity the direct and consensual light-reflexes are absent in the affected eye, as well as the near-vision reaction, and the sensory and psychical reflexes. The pupil is usually moderately dilated. The symptom may be present in one eye, or, more commonly, in both eyes. If the symptom is not completely developed there is merely a reduction in the activity of the iris; usually the near-vision reaction is less affected than the light-reflex, and it may persist for some time after the disappearance of the latter. Such a condition may be mistaken for reflex rigidity.

Absolute rigidity is frequently a result of acquired syphilis,

more rarely of inherited syphilis, and it may occur in parasymphilitic conditions. In the latter case Bach (2) is inclined to regard the symptom as a direct result of the antecedent syphilis.

Various infections and toxic conditions may produce absolute pupil rigidity—for instance, influenza and diphtheria, lead, alcohol, and ptomaine poisoning.

This phenomenon has also been observed in senile dementia, epilepsy, hysteria, and acute excitement.

It must not be forgotten that this symptom may be due to glaucoma, injury, or the use of a mydriatic, and that confusion may thus arise.

The *myotonic reaction* is sometimes seen in cases of incomplete absolute rigidity. This consists in a very slow recovery of the pupillary contraction brought about by light, near-vision, or the orbicularis reflex, after the contracting stimulus is removed.

Bach (2) states that he never found this condition apart from incomplete absolute rigidity of the pupil.

When absolute pupil-rigidity is associated with paralysis of accommodation, the condition is known as *ophthalmoplegia interna*. It may be bilateral, like or unlike in degree in the two eyes, or more frequently unilateral. The pupils are dilated. Often the ciliary muscle is affected to a less degree than the iris.

#### (7) *Reflex Rigidity of the Pupil.*

This symptom was described by Argyll Robertson in 1869, and is universally known by his name. He observed that in spinal myosis the pupils fail to react to light, but become smaller in near vision. As a rule, reflex rigidity develops gradually; the direct and consensual light-reflexes and the reaction to sensory stimuli become more and more sluggish, and myosis may appear; the near-vision reaction, however, remains normal, or in many cases becomes abnormally active.

The symptom may be unilateral or bilateral, or present in different stages of development in the two eyes.

Cases are occasionally seen in which the direct and consensual light-reflexes are absent, but the sensory reaction is retained, and there is no miosis.

Anisocoria is frequently present. The size of the pupils may show change from day to day, or may undergo more gradual variation. Irregularity of the pupil-margin is very common; it usually persists after the use of mydriatics and miotics.

Irregularity is often present before the development of the Argyll Robertson symptom, and it is even regarded by some as having a similar diagnostic significance.

The lid-closure reflex is often easily elicited. Several instances are recorded of return of the light-reflex — for example, during remissions in general paralysis. Bach questions the accuracy of these observations.

Typical reflex-rigidity is always a sign of organic disease of the nervous system. Most authorities agree in stating that the Argyll Robertson pupil is found almost exclusively in tabes dorsalis, general paralysis, and congenital and acquired syphilis; only exceptionally in other diseases of the nervous system. Such possible exceptions are certain focal cerebral lesions, especially of the corpora quadrigemina (Mott (19)), syringomyelia, and rare cases of multiple neuritis (Cestan and Dupuy-Dutemps (10)).

Unilateral Argyll Robertson pupil has been known to follow a punctured wound in the orbit (Laqueur (15); Hirschberg (30)).

When reflex pupil-rigidity is found in patients without other signs of tabes or general paralysis, and with a history of past syphilitic infection, an important question arises. If the presence of the Argyll Robertson symptom merely indicates a previous syphilitic infection, its diagnostic value is relatively slight, but if it points to the existence of the degenerative changes underlying tabes or general paralysis, it is a symptom of grave omen. Clarke (11) favours the latter view; he quotes thirty-seven cases of gross syphilitic disease of the nervous system, in not one of which the symptom was present in its complete form. Bumke (8) quotes Thomsen as authority for the statement that the Argyll Robertson phenomenon may be present for as long as eleven years before the development of other signs of tabes or general paralysis; but he believes that it is not permissible to assume that the presence of reflex pupil-rigidity in syphilis always indicates a metasyphilitic degeneration of the nervous system.

Siemerling, quoted by Bach (2), examined 923 female insane patients, and found reflex-rigidity in 79, incomplete reflex-



rigidity in 14 more. His results are given in the following table, which shows in how many cases and in what conditions the symptom was observed :

Disease.	Light reaction absent.	Minimal light reaction.
General paralysis . . . .	63	12
Epilepsy . . . .	2	1
Hysteria . . . .	1	—
Paranoia . . . .	—	1
Senile dementia . . . .	2	—
Alcoholism . . . .	2	—
Syphilis . . . .	2	—
Tabes with psychosis . . . .	5	—
Hemiplegia . . . .	1	—
Cerebro-spinal meningitis . . . .	1	—
	79	14

It appears that in nearly 90 *per cent.* of the cases the symptom was associated with general paralysis, tabes, or syphilis. Siemerling also examined 9,160 patients at the Charité, of whom 1,639 had reflex-rigidity : 1,524 of these, or over 95 *per cent.*, suffered from general paralysis, tabes with mental symptoms, or cerebro-spinal syphilis. His figures are given in the following table :

	Cases.
General paralysis . . . .	1,524
Tabes with psychosis . . . .	29
Senile dementia . . . .	19
Syphilis of the central nervous system . . . .	17
Focal lesions . . . .	19
Alcoholism . . . .	15
Injury of the head . . . .	1
Epilepsy . . . .	4
Hysteria . . . .	4
Paranoia . . . .	7
	1,639

Bach makes the apt criticism that many of the non-tabetic and non-paralytic cases enumerated above might eventually prove to be suffering either from general paralysis or from tabes.

Moeli, quoted by Bumke (8), observed reflex pupil-rigidity in 56 patients whose condition could not be diagnosed at the time as general paralysis or tabes. Of these, after a period of from three to six years had elapsed, 14 were recognised as tabetic and 7 as paralytic; 10 had cerebral disease other than general paralysis, and were either syphilitic or alcoholic patients; the remaining 25 were probably not syphilitic. Moeli estimated that 98·6 *per cent.* of all his cases of reflex-rigidity were either paralytics or tabetics.

Amaurotic rigidity, absolute rigidity, and the Argyll Robertson symptom may be mistaken for one another. Ballantyne (3) lays stress on the following points of distinction. Both in reflex and in amaurotic rigidity we find absence of the light-reflex with preservation of the near-vision reaction; in the latter case, however, there is blindness, usually with mydriasis; in the former case blindness is a rare complication, and there is usually miosis, and often an undue activity of the near-vision reflex. Typical cases of reflex-rigidity and absolute rigidity are easily distinguished by the absence of the near-vision reflex in the latter. It may be difficult or impossible to distinguish the Argyll Robertson pupil from the incomplete form of absolute rigidity in which a convergence reaction is obtainable. The distinction must depend chiefly on the presence or absence of miosis, and on the state of the near-vision reflex. In incomplete absolute rigidity the near-vision reflex, if present, is deficient, or may show the myotonic character, whereas in the Argyll Robertson pupil the convergence contraction is active, and may be unusually well-marked.

Bach maintains that the true Argyll Robertson symptom never develops into absolute pupil-rigidity. If this statement be correct, it is of value from the diagnostic point of view, for reflex-rigidity has a very close association with tabes and general paralysis, while the absolutely rigid pupil occurs in a wide variety of diseases.

The *neurotonic reaction* consists in a slow contraction of the pupil, produced only after illumination has been continued for some time. The contraction usually remains for some seconds, occasionally rather longer, and then slowly passes off. This symptom may be seen in certain cases where amaurotic rigidity is being developed, more rarely in incomplete reflex-rigidity (Bach (2)).

(8) *Paradoxical Light-reaction.*

This consists in dilatation of the pupil when the eye is illuminated, and contraction when it is shaded ; it may be elicited either directly or consensually. Usually the near-vision reaction is normal.

This condition is very rare. It may be simulated by other phenomena.

Bach remarks that in cases of marked paresis of the sphincter pupillæ, illumination of the eye produces a very slight contraction of the pupil, followed by a fairly quick and occasionally marked dilatation, which is due to atony of the sphincter. It would not be permissible to describe this phenomenon as an instance of paradoxical reaction.

(9) *Failure of the Near-vision Reaction.*

Occasionally it is found that the light-reflex is preserved, but the pupil fails to contract in near vision. This phenomenon has been recorded by Lauder Brunton (7) in a number of cases of alcoholic neuritis. It is not uncommon in post-diphtheritic neuritis (Purves Stewart (23)), and it has been exceptionally observed in general paralysis (Wernicke, quot. Laqueur (15)).

(10) *Perverse Near-vision Reaction.*

This condition is exceedingly rare ; it consists in dilatation of the pupil in looking at a near object, and contraction in gazing into the distance.

(11) *Loss of the Reaction to Sensory Stimuli.*

Loss of the reaction to sensory stimuli usually accompanies absolute and reflex rigidity of the pupil. It may be caused by a lesion which breaks the path of the sympathetic supply to the iris. It has been observed in katatonia and other mental diseases, apparently as a functional symptom, often without impairment of the reactions to light and near vision. On the whole, this condition is most frequently found in association with the Argyll Robertson pupil.

(12) *Absence of Pupillary Unrest.*

Absence of pupillary unrest usually occurs in the same conditions as absence of sensory reflex. Bumke has drawn attention to its occurrence in dementia præcox. He has also observed that in many patients pupillary unrest and the reaction to psychical stimuli may be absent at a time when the reflex dilatation of the pupil from painful stimuli can still be obtained.

(13) *Undue Activity of the Sensory Reflex, and Exaggeration of Pupillary Unrest.*

Undue activity of the sensory reflex, and exaggeration of pupillary unrest have been observed in some of the neuroses, such as hysteria, in certain stages of alcoholic intoxication, and in states of fatigue (Bumke (8)).

(14) *The Trigeminal Facial Reflex.*

The trigeminal facial reflex is said to be present in all healthy persons, but in insane patients, especially in general paralytics, it is often altered or altogether absent (Stefani and Bordera, quot. Bach (2)).

(To be continued.)

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### Clinical Notes and Cases.

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*On a Case of "Pellagra" in an Insane Patient.* By  
F. E. RAINSFORD, M.D., Medical Superintendent, Stewart  
Institution.

THE case I wish to bring under your notice to-day is interesting, inasmuch as it is, so far as I have been able to ascertain, the first recorded case in Ireland.

Most of you have probably noticed in recent issues of the medical journals various papers recording cases in English asylums, and it was from the information therein afforded that I was enabled to recognise the case in question.



Patient, K. R—, a widow, æt. about 70, was admitted into the Stewart Institution on July 3rd, 1913.

Her history was that she had had rather a hard life, having been deserted by her husband early in her married life when in good circumstances, and had a big struggle to bring up her family. She first broke down mentally in August, 1912, and was sent to a private asylum in September of that year, where she remained till May, 1913. She was then taken to her daughter's home, but got excited and very restless, and was inclined to wander. Developed delusions, mainly of personal danger, or of danger affecting her relations, and finally got so bad that she was sent to me.

On admission she was noted to be a woman of frail physique and worn appearance, ill-nourished, and older looking than her stated age. Her bodily organs were healthy and she took nourishment well.

Her mental condition was generally confused. She talked vaguely of the German Emperor, whom she thought was coming over to see her; of a green purse which had gone to heaven and so forth.

She settled down quietly for some days and seemed to improve, but on July 8th she got very restless and talked vaguely of lions, bears, and tigers which frightened her. The next day was much distressed, saying a great gunpowder explosion had occurred near and she feared it had damaged her house and children, that the Germans had landed, and that waggons of ammunition and cannons had gone along the road.

Later she thought the place was on fire and she tried to get out of the window.

She got trional gr. xx at bedtime on one occasion and soon quieted down, and was noted on August 2nd to be much quieter and to be eating and sleeping well.

In or about the middle of August my attention was called to an erythematous rash of a crescentic shape, situated in the middle of the forehead, extending from the roots of the hair downwards, about  $1\frac{1}{2}$  in. in breadth at its widest part. It exactly resembled an acute sunburn, but the limited area affected negatived that idea in my mind.

I confess I gave it little attention beyond directing the application of an emollient ointment. In a few days the hands became acutely inflamed, red and swollen, the inflammatory process involving all the backs of the hands and the wrists. They soon began to desquamate, and got hard and scaly. The portion of the forehead first affected soon healed up, the healing process being accompanied by slight branny desquamation, and the healing surface was coarse, harsh and dry. Some small patches of inflammation were noticed in angle of either eye and just below margin of lower eyelids. These latter patches never desquamated to any marked extent. On August 26th vomiting and diarrhœa were reported, which continued to the 30th, when treatment succeeded in checking both these symptoms.

Notwithstanding this, the patient got progressively worse, and on September 2nd I note that patient is dull and drowsy and disinclined to eat; swallows with difficulty and is in a semi-stuporose condition, from which it is difficult to arouse her. On the 3rd muscular twitchings were noted, and a tendency to stertor, so that I feared she was about to get an attack of cerebral hæmorrhage. The knee reflexes were

absent, and there was a general languor and prostration out of all proportion to the symptoms.

Up to this I had, I must confess, not recognised the nature of the affection, but an article which appeared in the *Lancet* for September 6th made it clear to me that I had to deal with a case of the so-called "pellagra." I then asked Dr. Walter Smith, our consulting physician, to see the case, and he agreed with me in making a provisional diagnosis of "pellagra."

Later, Dr. Moorhead saw the case and concurred in this opinion.

The patient rapidly sank, and died on September 11th.

Just before her death, my assistant, Dr. Drury, kindly took some photographs to show the condition of the hands, but owing to the patient's very weak state and the deficient light in the room, they are not very illuminating. The condition of the hands just before death may be described as presenting a purplish-brown discoloration, which was continuous over the extensor aspects, there being no patches of healthy skin; ends of fingers from roots of nails not affected; this is also noted in Dr. Cole's case. The skin feels rough and scaly and there are patches of pigmentation, most marked on the wrists, deeper towards the carpal bones, and fading off as it extends up the arm.

The patch on the forehead, which had almost healed up before death, showed but little pigmentation, but there were isolated patches of dried-up secretion of a deep amber colour. There was never any œdema, and as far as could be ascertained, the condition was painless.

It is abundantly clear that if we are to regard this as a genuine case of "pellagra" we shall have to modify, or, indeed, completely re-arrange, the old teaching as to this disease and its causation.

Dr. Blandly, of Napsbury Asylum, in the *Lancet* of September 6th, describes eleven cases of this condition; and Dr. Cole, in the same issue, records a case in Bethnal House Asylum.

In the *Lancet* for October 18th Dr. Emma Johnstone records three cases in the Holloway Sanatorium. Now it is significant that all these cases are recorded as occurring in a year in which the temperature was exceptionally high and the sun's rays very intense. As far as I can make out, all cases had been exposed to the heat, though, as in my case, for a very limited period.

Most of them were patients whose general health was much below par.

It is also remarkable that whereas in Italy and other countries where the disease is endemic, the history of the cases is first pellagra and then insanity, all the cases so far noted in England have been in the insane.

None of the cases recorded seemed to have used maize as an article of diet.

Dr. Sambon, who has done so much to elucidate the pathology of the disease, contests the truth of the maize theory, and seems to incline to the view that it is caused by a fly of the *Simulidæ* order, but though Dr. Blandy notes that the larvæ and pupæ of this fly were found on the banks of a river about 700 yards away from the asylum, I don't think the causation has, as yet, been fully worked out.

I have no doubt that cases similar to mine have occurred during the summer in other Irish asylums, and I shall be very much obliged if any medical officer of an asylum who sees my paper will either let me know if he has had cases of a similar nature, or will publish the same at a future meeting.

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*A Case of Strangulated Inguinal Hernia in an Old Insane Woman, with Gangrene of the Bowel; Enterotomy; Recovery.* By EDWARD GANE, M.D., Assistant Medical Superintendent, Sunderland Borough Asylum.

E. J. S—, æt. 77 years, was admitted to the Sunderland Borough Asylum labouring under melancholia of a rather confused type.

On the night of October 21st a swelling about the size of a hen's egg appeared in the left groin. The patient complained of pain, and vomited once a darkish-brown fluid. The swelling was tense, elastic, and obviously contained fluid. There was no impulse.

It was not known at the time whether the patient was subject to a rupture, and there was no indication of one on admission. Later, on inquiry from relatives, it was found that she had had a hernia for many years.

The signs of strangulation were not definite, and the patient could give no reliable account of her symptoms. On the third day, however, her condition was serious, vomiting began to be more frequent, and I decided to explore the swelling.

Under an anæsthetic I made an incision over the whole length of the inguinal canal, and exposed the sac, which had the appearance of dirty wet wash-leather. A clear fluid escaped. A knuckle of bowel, apparently gangrenous, appeared at the bottom of the sac. Except for its apex it was closely adherent to the sac.

Under these circumstances, and the condition of the patient being critical, I decided merely to incise the bowel and leave it *in situ*. This was done, a thin mucoid fluid escaping. A couple of stitches were inserted at the ends of the skin incision and a suitable dressing applied.

The patient vomited freely after the anæsthetic, and during the night collapsed, but rallied after administration of amyl nitrite and strychnine.

She was somewhat better in the morning, and was much relieved

towards evening by the passage of a small quantity of fæces by the wound.

Two days later an enema was given and subsequently the lower bowel began to act naturally, the amount of fæces escaping from the wound becoming less and less. This ceased a few days ago, and the wound is now almost healed without the presence of a fistula. The bowels act naturally, and the patient takes her food in a very satisfactory way. Her general health (and temper) are in fact much better than they were before the operation.

The case may be of interest as showing the complete way in which recovery may take place under unfavourable conditions.

With regard to the treatment, I must ask my surgical readers to be gently critical. Insane patients give one little help towards an accurate diagnosis, and their symptoms are very often anomalous, or, at any rate, usual symptoms are not seldom absent. Moreover, as in this case, the patients are often restless after an operation and difficult to control.

I publish this case, which has been previously reported in the *St. Bartholomew's Hospital Journal*, with the kind permission of Dr. Middlemass, Medical Superintendent.

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## Recent Medico-Legal Cases.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

### REX v. CHETWYND.

A case in which considerable public interest centred came before Mr. Justice Scrutton, at the Derbyshire Assizes on Saturday, when George Rowland Chetwynd, æt. 25, engineer, was charged with the theft of a motor-car, of the value of £250, the property of Dr. T. A. Barron, at Spondon, on July 5th, 1912.

Mr. Drysdale Woodcock prosecuted, and Mr. Hugo Young, K.C., with Mr. H. Maddocks (instructed by Messrs. Moody & Woolley), defended.

Before defendant was called upon to plead, his Lordship inquired of the defending counsel: Is he fit to plead?

Mr. Hugo Young: Oh, yes.

His Lordship: I thought there was some doubt as to his sanity?

Mr. Hugo Young: No.



*The Prosecution.*

Mr. Woodcock, outlining his case, said that on the night of June 29th, or early the following morning, there was stolen from a garage in Church Street, Spondon, a 12 h.p. "Sezare" car, which belonged to Dr. Barron, of Spondon. The number of the car was LD 8997. The car had been put away in the garage about eight o'clock on Saturday night, the garage door secured, and the yard door leading to the garage also locked. On the Sunday morning, about 9.30, the garage was visited, and it was found that the garage door had been forced open, and the car, with lamps, rugs, etc., missing. A resident near by had stated that he heard the car leaving the garage about 1 a.m. About 7.30 on the Sunday morning the car was at Ashbourne, and a witness named James Cundy would say that defendant was driving the car, and asked him for some petrol, as he wanted petrol, but could not pay for it. Cundy would not supply him upon this condition, and recommended defendant to another place, as the latter said he did not wish to go to a big place. Ultimately he obtained the petrol from a chemist in Ashbourne, named Mr. Reckless, and not until the petrol was being poured into the tank of the car did he say that he had not money for it, and the chemist took the number of the car, which was then D 899, part of the plate having been cut away. Defendant told Reckless that he was going back from Tamworth, and having regard to the subsequent movements of the car, it was obvious that he had no intention of returning that way. The car appeared to have broken down at Mayfield about 10.45 that morning, and was repaired by a man named Travers. Defendant spoke to Travers the whole time about the car, just in the way the owner of the car would talk. At night, on the same day, defendant and car arrived at the Pied Bull, Chester, and defendant engaged a room, and was standing a man drinks in the bar when the landlord remarked that he had seen him previously, and asked him whether he was in a position to pay for the room and drinks. The man said "No," and the landlord, unwilling to do business on these terms, requested him to remove the car and get out of the house. A lamp was left behind by way of security for the drinks. Later, the same night, defendant came across a man named Roland, of the Chester and North Wales Garage, and from whom he inquired if there could be a sale for the car, and he was told that he would have to leave it for five or six weeks before a purchaser could be found. He gave Roland the name of Wilson, of Northwich, and he left Roland to believe that he was going on to Northwich. On July 1st he was found at Ellesmere, in Shropshire, and there obtained petrol from a man named Hughes, obtaining the petrol by a perfect tissue of falsehoods. He gave the name of F. A. Wilson, of Chester, declared that he was in the Government service, had received a wire calling him from Chester to Shrewsbury, and left so hurriedly that he had forgotten to take money, and under these circumstances Mr. Hughes gave him credit. At Chapel, Bangor, four miles from Aberystwyth, defendant and the car were found by the roadside, and he was met by the Chief Constable of Cardiganshire and Inspector Edwards, of the Cardiganshire Constabulary. The Chief Constable questioned him about the ownership



of the car, and Chetwynd said, "It is mine." When the Chief Constable said he had reason to believe that it was a stolen car, Chetwynd said he would prove it. The man was taken to Aberystwyth, and was placed in the lock-up. About 10 p.m. he was found lying on the floor, having apparently fallen from his bed. He was picked up by an officer, and, said counsel, adopted this *rôle*, "Good God! What am I doing here?" He drew his hand across his forehead, and appeared to be completely ignorant of all the events that had led up to his being there. On the following morning he was taken into custody. Chetwynd, after the fall in the cell, pleaded an extraordinary lapse of memory, having forgotten everything that had previously happened. However, he said to Detective-Inspector Davis, of the Derbyshire Constabulary, "I admit everything." When before the magistrates, however, he said, "I know nothing at all from the day I left camp (he having been in the Territorials)—which was on the 1st of June, until I was awakened by the Inspector at Aberystwyth. During that time I remember nothing that I was doing. My memory is a complete blank." What was the saddest aspect of this story was that defendant had been for some years on terms of the closest intimacy and friendship with the owner of the car and had frequently been a visitor to the doctor's house, and also knew the garage well. The defence of insanity would probably be raised in the course of the case, but he submitted that the case was a very common, ordinary case of motor-car stealing, the only aspect of a peculiar character being that whereas the ordinary thief did not steal from his friend, they had here a man, undoubtedly educated and who should have been above conduct of this sort, stealing this car from a man who had admitted him to the closest and most intimate friendship.

Jos. Clewes, of Park Road, Spondon, chauffeur to Dr. Barron, spoke to leaving the car secure in the garage on the night of June 29th and missing it the following morning.

Dr. Barron said he first made the acquaintance of Chetwynd about four years ago and accused had been on terms of perfect intimacy with him.

In reply to Mr. Hugo Young, the doctor said that Chetwynd was aware where the keys of both the garage and petrol store were kept, and could easily have obtained them. He agreed with the learned counsel when the latter said that Chetwynd was a sergeant in the Royal Bucks. Hussars Territorial Forces and devoted a good deal of energy and time to the work. Mr. Young also put it to witness that Chetwynd was a member of the Metropolitan Sergeants Tactical Association, had written a book on drill for boy scouts, and had also been a lecturer on military subjects. After the discovery of defendant and the car, Dr. Barron said that he went over to Aberystwyth and spoke to two gentlemen who had found Chetwynd and the car by the side of the road, and he came to a conclusion which led him to ask the magistrates to permit him to withdraw the prosecution. The magistrates consented, subject to the papers being placed before the Public Prosecutor, who had returned it to court. He admitted to Mr. Woodcock that he appeared very unwillingly.

Jas. Cundy, stableman, of the Green Man Hotel, Ashbourne, said he was asked for petrol by Chetwynd, but he commented, "Although

he spoke like a gentleman it was not my business to let him have it if he did not pay for it." (Laughter.) Cross-examined, he said that Chetwynd appeared rather "fluttered."

Arthur Henry Reckless, Church Street, Ashbourne, chemist, said he supplied the accused with petrol, and the petrol was being poured into the tank when Chetwynd said: "I am sorry I shall not be able to pay for it. You will be all right. I will call as I come back." He took the number of the car, D 899.

Chas. Travers, mechanical engineer, of Mayfield Mills, said he saw the car when it had broken down and helped to rectify it. Chetwynd talked rationally and asked witness if he could save his life, so witness gave him a cigarette. (Laughter.)

Ernest Petty, landlord of the Pied Bull, Chester, said upon Chetwynd's arrival he asked him if he could pay his bill and the man said "No," and that his luggage had been stolen. Witness told him that he did not believe him, and asked if he was in the habit of doing this. He ordered Chetwynd to leave, and the man left a motor lamp as security for payment for drinks.

Jos. Roland, employed at the Chester and North Wales garage, said he supplied Chetwynd with petrol and Chetwynd spoke to him about the sale of the car.

John Robinson Hughes, Ellsmore, Shropshire, motor engineer, said that Chetwynd told him the story of being in Government service in order to obtain petrol on credit.

Inspector Edwards, of Aberystwyth, described the discovery of Chetwynd with the car by the roadside. Chetwynd appeared quite rational. After removing him to the lock-up, he found him on the floor of the cell. Witness assisted him up, and Chetwynd suddenly declared: "Where am I?" Chetwynd professed ignorance of the cause of him being there, and complained of pains across his forehead. He could feel a small lump, which he believed was caused by the fall. Chetwynd had 7½d. and a pawn-ticket upon him when arrested.

Cross-examined, the officer said that he was not aware that Chetwynd had slept in his car overnight at the spot where he was found the following afternoon.

Detective-Inspector Davis said that when Chetwynd said "I admit everything," he appeared to understand what he was saying. Whilst being escorted to Derby accused said that he could not remember anything about the motor-car. Witness told him that he did not believe him. The officer declared, "I said don't you remember being at Chester and staying at the King's Head and paying the landlord with a worthless cheque. He said 'No,' and asked if it was so."

### *The Defence.*

Mr. Hugo Young, for the defence, said that there was no dispute that the man took the car, altered the identification plate, incurred debts, but what he would lay before them was that the man was not what they would call insane—he was perfectly rational now—but he was in a state which was well known to medical men, and was called by many names, one of which was automatism. He would call two doctors of eminence

who would say that everything that had happened, and which in an ordinary case would be evidence of guilt, was consistent with that state. It was not a defence set up by lawyers, but by Chetwynd immediately after his recovery from the fall at the police station. It was not a state of insanity strictly, but a temporary state of irresponsibility which made him unable to be guilty of the intent which was necessary in an act of larceny.

Robert Webb, a motor tourist, spoke to finding Chetwynd and the car by the roadside at night, and he towed the car towards Aberystwyth, but four miles from that place Chetwynd refused to go further, and witness left him for the night, but reported the affair at a garage in the town. He thought Chetwynd's behaviour was very strange.

Maxwell Wood, proprietor of a garage at Aberystwyth, said he went out to Chetwynd, and having read of the stolen car, brought the police on the scene. He was also of opinion that Chetwynd did not appear "all there."

Chetwynd went into the witness-box. He said that his age was 27. He remembered seeing his comrades from camp depart on June 1st at Buckingham Station, but what became of himself afterwards until July 2nd, when he found himself in the hands of the police, he could not say.

Mr. Woodcock (cross-examining): Have you any knowledge now?—None at all.

Had you any debts which you could not pay?—Yes. I could have paid them with help.

With your own resources, without help, could you have met your liabilities at that time?—Well, if you mean help from my parents, I could.

Without help from your parents or anybody else, could you in any way have met your liabilities?—No.

Were you at that time in desperate need of money?—Not at that time.

Counsel further questioned him with regard to his secretarial connection with a territorial club, to which Chetwynd admitted that his father might have paid from £75 to £100 on his behalf, but he could not say when.

His Lordship: Dr. Jekyll was never tried for his impersonation of Mr. Hyde. Perhaps you can say what his defence would have been? (Laughter.)

Mr. Woodcock: He only had one alias.

Dr. Parry Jones said after careful examination of the man and his story he had come to the conclusion that the man did not know what he had been doing. There were many recorded cases of a similar character.

His Lordship said he remembered reading of a case of a girl in America who was bad for two years and good for two years, and so on. His Lordship asked if it was possible for Chetwynd to have known what he was doing at the time but to forget afterwards, and the doctor replied that the man's actions were consistent with automatism, mental stupor, or double consciousness.

His Lordship: The question is whether the body which was walking

about between June 1st and July 1st knew what it was doing. If it did, the unfortunate owner of that body would get punished even if he did not remember afterwards.

His Lordship remarked that his personal idea was that Dr. Jekyll would hang for the murder which Mr. Hyde did, although Dr. Jekyll did not know what Mr. Hyde was doing.

Dr. Parry Jones : He would not know that he was doing wrong.

His Lordship : Why should he cut the identification plates if he didn't know that he had done something wrong?—He was conscious that he had done something which he ought not to have done.

Dr. Hyslop, of London, who occupies an eminent position in the profession, said that during the past twenty years there had been a vast accumulation of cases where people acted automatically and lost their memory. The condition could be described as being midway between ordinary somnambulism and a form of epilepsy, in which condition the person affected performed mentally and physically complicated actions. When they returned to the normal condition of fully awakened consciousness they had absolutely no memory of anything which had transpired during the automatic state. Persons in this state had even adopted different names and committed various offences, which in the normal state the individual would have been the very first to condemn. This abnormal condition continued for weeks and even months, and in the majority of cases the persons affected emerged quite suddenly from the abnormal state, and, although every known test had been applied, doctors had been unable to elucidate that the persons affected had any knowledge or consciousness of any events during the abnormal condition.

His Lordship commented upon the case of the bad girl he had previously mentioned, and the doctor said the usual rule was for the bad personality to remember about the good personality, but the good personality remembered nothing about the bad.

His Lordship : Would you describe the good person as sane?—Yes.

Is the bad person insane?—No.

The doctor added that he did not think the question of insanity came in any more than in the case of a person dreaming.

He was in agreement with Dr. Parry Jones that this was a case of mental automatism.

His Lordship : Did he know the nature of the acts he was doing on the 29th and 30th of June?

The doctor said that that personality which he had described might have known, but the fully awakened personality did not know. In other words, the abnormal and irresponsible self probably knew, but the responsible and normal self did not know.

When the abnormal personality took away the car and altered the motor plates did it know it was doing wrong?—I think the abnormal personality might have known something about it, but not the full personality. He said that he had known a person during the abnormal condition to preach a sermon in a church!

His Lordship : With great benefit to the hearers?—Great. (Laughter.)



Mr. Woodcock: Would you stake your reputation on the assertion that when he took the car he did not know the difference between right or wrong?—I am prepared to stake my reputation that at the time he took the car he was not fully aware of the relationship of all the circumstances to his fully wide-awake self, the full and complete individual.

Do you say the man who took the car on that night was clearly, in your opinion, incapable of distinguishing between right and wrong?—I am clearly of opinion that the man who took the car was not the man, but only a part of the conscious individual.

Mr. Woodcock said the only point at issue was the one of insanity. They had there one of those miserable cases where a man of some birth and education, led into temptation, fell to a lower level than a common thief. That was one of the most dangerous pleas that could for a moment be countenanced by a jury. There would be an end to justice if in bringing thieves to book they allowed such a plea to influence their judgment without from the very depths of their consciences they were satisfied that this was one of the astonishing cases in which a man lapsed into a stupor in which he was unconscious of having done anything wrong and had entirely forgotten about it.

His Lordship said that in the dock sat a body, in that body was a brain which in some mysterious way controlled and regulated the body, and to which was attached a power of determining action and power of judging whether that action was right or wrong. That body, brain, and judgment bore the label Chetwynd. The prosecution said that that body, brain, and judgment took away Dr. Barron's motor-car with the intention of depriving him permanently of possession of the car. The answer to that was that part of the body and brain may have taken away the motor-car, but the whole of it did not do so; the responsible part was asleep and woke up on July 2nd. The responsible part never knew anything about or intended the act, and they, therefore, could not punish the whole for the act of an inferior part.

He (his Lordship) was suspicious all through that if, instead of a well-dressed body in the dock charged with stealing a motor-car, there had been a man in rough corduroy who had broken a window and stolen jewellery, and put in a plea that the responsible part of him was asleep, the judge and jury probably would have thought very little of the defence the poor body put forward. They must be very careful that they were not making a law for the rich that they would not make for the poor. On the other side possibly some of them walked in their sleep or knew someone who did. If such a person while asleep hit another person under the impression that he was a burglar there would be a defence. In the present case it was claimed that the body was in a long period of sleep-walking. So far as he (his Lordship) knew that was the first case in England in which it was suggested of a person that he had a double consciousness. Unless they made the case analogous to sleep-walking he did not see how they could avoid convicting prisoner. It was a dangerous thing to have double personalities going about England taking motor-cars, altering plates, and not paying bills at the hotels.

He asked the jury to say if prisoner on June 29th took away the motor-car with intent permanently to deprive Dr. Barron of it, and, secondly, if they thought he did intend to deprive the doctor of the car,

was he suffering from a disease of the mind which prevented him from knowing the nature and quality of the act.

After forty minutes' deliberation the jury returned an answer of "Yes" to the first question and "No" to the second.

Before sentence was passed Mr. Maddocks called Dr. Barron, Dr. Luce and the Rev. A. L. Browne (Vicar of Spondon).

Dr. Barron stated he had known Chetwynd intimately for some time, and he testified to his good character.

Dr. Luce (senior surgeon at the Derbyshire Royal Infirmary) said Chetwynd had been a personal friend, and he had always found him of excellent character.

The Rev. A. L. Browne said he had known Chetwynd for the past five years. He was a man straightforward in character and straightforward in all his dealings, and was always anxious to do all he could for others.

Mr. Maddocks, referring to the deficiency in the Territorial accounts, said everything had been cleared up before the present case. Chetwynd was an only son. He had been engaged to a young lady, but the engagement was broken off on May 28th, and on June 1st Chetwynd wrote to his parents. In this letter he stated that everything had gone wrong, and he was almost off his head. The letter was written on the 1st, and he then went away, apparently to Liverpool and afterwards to Chester. It was quite evident that he was at that time greatly upset, and hardly knew what he was doing. He had suffered punishment by standing in the dock, and by the fact that he had been found guilty by the jury. Dr. Barron asked that he should be dealt with with the utmost leniency, and Mr. Maddocks added that he hoped that his Lordship would allow him to make a fresh start in life.

In sentencing Chetwynd, his Lordship said he had not only been found guilty of stealing the motor-car, but also of covering up the theft by a series of lies. He had taken into account all that his counsel had said. He passed a sentence of four months' imprisonment in the second division.

The only elements in the demeanour of the prisoner that afforded the slightest colour to the plea of abnormal personality advanced in the defence were the facts that the prisoner broke open the garage when he might perhaps have opened it with the key, and the state in which Inspector Edwards found him when in prison. As to the first, there are twenty conceivable reasons why a man in the position of the prisoner, if he was determined to steal the car, should have preferred to break open the door rather than unlock it. Obviously, if he had unlocked it, the facts that it was unlocked, and that he knew where the key was kept, would have pointed directly to him as the thief. As to his being found on the floor of his cell and asking, "Where am I?" this is quite consistent with the very common practice of prisoners in pretending they remember

nothing about the crime with which they are charged ; and it is, to say the least, very unusual in cases of double, or rather, alternate, personality. It is true that in such cases the end of one phase or personality and the beginning of the other are sometimes marked by an epileptic fit ; but there was no evidence of epilepsy in this case, and no attempt on the part of counsel is reported to elicit from Inspector Edwards any evidence consistent with the prisoner's having had a fit, except that he was lying on the floor, and that there was a small lump on his forehead. There is no evidence that he was dazed or confused ; no evidence of bitten tongue or of flushed face ; no passage of urine or fæces ; no disarrangement of clothes ; no evidence of previous epilepsy ; nothing, in short, that could not have been faked. Moreover, there is much evidence that is quite inconsistent with the double personality hypothesis. The prisoner himself dates his period of unconsciousness from June 1st to July 2nd, and it is important to observe that the car was stolen on June 29th, and that not until June 30th or July 1st did he call himself Wilson. From June 1st to June 29th, during part of which time he seems to have been staying with Dr. Barron, the owner of the stolen car, no change of disposition was noticed in him, and he went by and answered to the name of George Chetwynd. It is not unusual for a person to assume, with an altered personality, a new name ; but there is no case on record in which a person has gone by his own name during one part of a new phase, and by another during another part of the same phase ; still less is there a case on record in which the new name was not assumed until after the commission of a crime. Inspector Davis deposed that Chetwynd, while in custody, said " I admit everything," and it seems that he said this after he had been found by Inspector Edwards on the floor, and therefore after he had resumed his own proper and normal personality, in which, on his own showing, he remembered nothing whatever about the crime or the events of the previous month ! Subsequently he told Davis that he could not remember anything about the motor-car, and Davis said he did not believe him. I don't know whether it was within the scope of Davis's official duties to make this remark, but I must confess to a good deal of sympathy with him. Reviewing the whole of the evidence, it is as certain as anything can be in this world of uncertainties that Chetwynd

was Chetwynd throughout the whole transaction ; and that the defence of double personality was, as far as he is concerned, utterly unjustifiable.

It is a pity that the very interesting question of responsibility in a case of double, or, as it should be called, alternate personality, should have been tried for the first time in a case where such a plea was so obviously inapplicable. I have often discussed, both with psychologists and with lawyers, the ethics of such cases, and the justice and expediency of punishing A for a crime committed by him when he was not A, but B. With respect to the case under notice, a letter appeared in the *Times* from Mr. Compton-Rickett, protesting with a good deal of indignation against the summing-up and judgment of Mr. Justice Scrutton. For my part, I agree with every word of it. To me there seems an easy way out of the difficulty. Double personality is a misnomer for these cases. They are cases, not of double, but of alternate personality. The man is not two men at once : he is first one man, and then another. Now, if A commits a crime when he is not A, but is the alternative personality, B, it may be fairly argued that it is unjust to try A for a crime of which he was unconscious, and which, as he now is, did not commit. But it would be easy to put A back, and to postpone his trial until B should reappear, *as, sooner or later, he is certain to do*, and then to try him. If he were condemned to death as B, A might reappear before the sentence was carried out ; but we should only have to wait for the reappearance of B, and then hang him, as he would richly deserve. If B did not come upon the scene again, it might be taken for certain that he never existed, but was invented by A, as he was by Chetwynd, and there would then be no harm in hanging A.

For the full report in the *Derby Daily Express* of November 4th I am indebted to Dr. Legge.

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### Occasional Notes.

#### *The Retirement of Dr. Urquhart.*

Dr. Urquhart, who for sixteen years worked assiduously as Editor of the *Journal of Mental Science*, and who for more than twice that period has taken so prominent and vigorous a part in the affairs of the Medico-Psychological Association, will receive the heartiest good wishes of its every member for a long enjoyment of freedom from office.

Few men have more thoroughly earned the right to retire than has Dr. Urquhart. In addition to his many activities for this Association, and his innumerable special services for it, he has taken a full-handed share in the medical and social work of Perth and Perthshire, all this voluntary service being in addition to the management and development of the Murray Asylum, together with a very considerable output of literary work and scientific matter throughout his career.

That he has earned the confidence and esteem of his professional brethren is evidenced by his having been President of our Association, President of the Perthshire Medical Association, and for many years a member of the Council of the British Medical Association. His honorary membership of many foreign alienist societies is an additional evidence of this general appreciation of his medical work and character.

Of Dr. Urquhart's incessant activity, it might well be said—

“Day after day filled up with blessed toil,  
Hour after hour still bringing in new spoil”—

for he was ever making new acquisitions of knowledge, both medical and literary.

That the ill-health which has led to his retirement may soon pass away, and leave him many years of the leisure he can so worthily employ, is the wish of innumerable friends, and especially of those who are members of the specialty he has so long and truly served.

#### *The Mental Deficiency Act.*

The constitution of the committees for the local administration of the Mental Deficiency Act formed the subject of an earnest discussion at the last Quarterly Meeting of the Medico-Psychological Association.

A report of the meeting appears in this number of the Journal, and it will there be seen that a resolution was passed unanimously to the effect that the Asylum Visiting Committees (with such additions as the Act requires) should be the committees for carrying out the provisions of the Mental Deficiency Act, and that there should be no disturbance of the statutory powers now held by the existing visiting committees under the Lunacy Act.

In this connection the members of the Association will doubtless be interested in the proposals for fresh legislation which have been made by the London County Council, and there is, accordingly, published at page 174 an extract from the London County Council (General Powers) Bill.

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## Part II.—Epitome of Current Literature.

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### 1. Physiological Psychology.

*Why Psycho-analysis is Interesting* [*Das Interesse an der Psychoanalyse*].  
(*Scientia*, Nos. 5 and 6, 1913.) Freud, S.

In an admirably simple, luminous, and concise manner, Freud here presents in some twenty pages all the chief aspects of psycho-analysis. (For some unexplained reason the first part of the paper is in German, and the second in French.)

As examples of diseased conditions to which psycho-analytic therapy may be applied, he names hysterical attacks and manifestations of inhibition, as well as neurosis of obsession in action or idea. They are conditions which sometimes tend to spontaneous cure, and are liable to be obscurely affected by the personal influence of the physician. In the severer psychoses psycho-analysis can effect nothing. Yet even here it can furnish, for the first time in the history of medicine, an insight into origin and mechanism.

Putting aside the medical interest of psycho-analysis, there are many phenomena of mimicry and speech, found both in normal and diseased persons, which psychology has hitherto neglected. Such are lapses of speech, of writing, and of memory, and dreams. For these various unsatisfactory pathological or physiological explanations have been sought. Psycho-analysis has shown that they may be explained on purely psychological grounds, and has thus narrowed the sphere of physiology and appropriated a large section of pathology for psychology. Normal, and so-called pathological processes have been shown to follow the same laws. Freud proceeds to refer in more detail to lapses and to dreams. Lapses of speech or memory are to be regarded, not as the result of mere momentary distraction, but as having sense, tendency,

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and design, and as usually due to a psychic conflict. They furnish the most convenient material available for anyone who wishes to convince himself of the credibility of psycho-analytic conceptions. The usual motive of such lapse is the avoidance of some discomfort. Thus, we may lose an object if we dislike the person who was the giver of it. Memory is not impartial, but seeks to avoid the reproduction of impressions which are associated with unpleasant emotions. We may also forget the name of a person who is not himself unpleasant to us, but in some way suggests unpleasant emotions. There are other motives for lapses. Thus, the loss of a valuable object may be a sacrifice in the hope of propitiating misfortune, thus embodying an ancient superstition which is not consciously accepted. The psycho-analytic explanation of lapses, trifling as such phenomena may seem, to some extent changes our whole conception of the world. The sphere of chance is contracted, and even our awkwardness may be only the mantle which covers our deepest designs.

Even more significant is the psycho-analytic interpretation of dreams. Psycho-analysis has raised dreaming to the level of a psychic act having sense and design, a place in the individual's soul-life. The physical stimuli of dreams are merely the material with which dream-formation works. "Dream-interpretation is the foundation-stone of psycho-analytic work." Its results are the weightiest contribution of psycho-analysis to psychology. Lapses and dreams together have furnished the key to the riddles of the psychology of the neuroses. The dream is the normal image of all psycho-pathological formations. "For him who understands dreaming the psychic mechanism of the neuroses and psychoses is transparent."

This is illustrated by reference to hysterical attacks, which, for psychoanalysts, are the mimic representation of scenes, once lived or imagined, and unconsciously continuing to occupy the patient's imagination. Similarly in obsessional neurosis the patient's apparently unmeaning ceremonials are seen to be, even the most absurd of them, the mirror of the conflicts of life, the struggle between temptation and moral inhibition, the secret wish and the punishment for it. In the stereotyped acts of dementia præcox, again, psycho-analysis sees the survival of intelligible mimic acts expressing the desires which once ruled a patient, whose wildest speeches and postures are susceptible of explanation. So also with the delusions, hallucinations, and systematised ideas of other insane patients. Psycho-analysis brings in law, order, and connection, or at least allows us to suspect their existence. A good half of the psychiatrists' work is thus won for psychology, though it is admitted that, as regards the other half, the influence of organic factors, mechanical, toxic, infectious, must be accepted.

Freud then proceeds to discuss the interest of psycho-analysis for the non-psychological sciences. (a) *Language*: Psycho-analysis concerns the philologist, since the mechanism of language resembles that of dreams; for instance, in being ambivalent, and possessing contradictory meanings; in the employment of symbols also language resembles dreaming. (b) *Philosophy*: Here psycho-analysis affects the current views of the relations between body and mind, and puts the problem of the unconscious on a new basis. In another respect philosophy is

stimulated, for psycho-analysis enables us to establish the psychographies of philosophers and so illuminate their worth. (c) *Biology*: Psycho-analysis especially concerns biology by rendering justice to the sexual function, both in its psychic and in its practical aspects. It has revealed the falsity of the old notion of the asexuality of children, it has demonstrated the existence of an underlying bisexuality, and has played the part of a mediator between biology and psychology. (d) *History of evolution*: Psycho-analysis is essentially concerned with questions of origin and evolution, and its genetic method is capable of wide application, introducing into the study of the psychic life generally the principle that ontogeny repeats phylogeny. (e) *History of civilisation*: In the comparison of the childhood of the individual with the childhood of the race, psycho-analysis furnishes a new instrument of investigation. It enables us to extend to myths and legends the results gained from the study of dreaming, and to understand the transformations which myths undergo; it also sometimes reveals the motives which determine these transformations. It shows how the same complexes which underlie dreams and morbid symptoms may also underlie myths. By a further extension it throws light on the origins of our various great institutions, religion, morality, law. It establishes a relationship between the psychic operation of individuals and of communities, showing how both spring from the same dynamic source. In both cases the chief function of the psychic mechanism consists in a deliverance from tensions engendered by needs. In part the deliverance is effected by the satisfaction of those needs. But in part it is effected by the soothing of needs which cannot be satisfied. "A knowledge of the neurotic affections of individuals is of great service in the comprehension of social institutions, for the neuroses are so many attempts to resolve individually the same problems which are the concern of social institutions." (f) *Fine arts*: Art also is an activity exercised with the aim of appeasing needs which can be satisfied neither in the artist himself, nor in the audience or spectators. "The motor forces of art are the same conflicts which precipitate other individuals into neurosis, and impel society to found its institutions." Psycho-analysis also reveals the hidden sources of artistic activity in the impressions of childhood. (g) *Sociology*: Psycho-analysis shows the normal part which erotic elements play in the social feelings, and reveals the asocial character of the neuroses, the isolation of disease being a substitute for the isolation of the cloister. On the other hand, it shows how excessive social demands are a cause of neurosis. The forces which provoke in the individual the repression of the egoistic instincts are chiefly engendered by docility towards the social claims of civilisation. (h) *Education*: Psycho-analysis is full of interest from the educational point of view. Our amnesia for all that touches on early childhood shows how far removed we are from childhood, and explains the stupefaction with which the revelations of psycho-analysis concerning childhood have been received. When teachers are familiar with the results of psycho-analysis it will be easier for them to accept many puzzling phenomena of childhood, and they will no longer be tempted to over-estimate the importance of seemingly perverse or asocial impulses. They will understand also that any attempt at the violent repression of such impulses can never result in their healthy



domination, but merely in a suppression which sows the seeds of neurotic disorder for future germination. It is only by a gradual sublimation that the asocial tendencies of childhood can be transformed into finer shapes. "Our highest virtues have arisen as reactionary formations and sublimations on the basis of our worst dispositions."

HAVELOCK ELLIS.

*Psychiatry as an Aid to Historical Investigation* [*Die Psychiatrie als Hilfswissenschaft, auch der Historik*]. (*Neurolog. Ctblt.*, Sept. 1st, 1913.) Näcke.

This posthumously published paper—the last which came from Näcke's pen—had its starting-point in a discussion at a recent Congress of German alienists at Strassburg, on the application of psychiatry to the life of Jesus, a question which has in recent years attracted considerable attention. At the Strassburg meeting Nissl had declared that psychiatry has no concern with history. That dictum Näcke proceeds to investigate.

No science can exist in isolation, and it is inevitable that (as has occurred especially since the work of Moebius in this field) psychiatry should be applied to historical, literary, and artistic personalities and their works, in the construction of so-called "pathographies." No degradation is involved either to medicine or to art, but, on the contrary, a great advantage to both.

We know that every event, whether individual or social, is both endogenously and exogenously determined. To describe the exogenous factors, as displayed in the environment, is the special business of the historian and the economist. But the important, and often even predominant, endogenous factor can only be dealt with by the psychologist and the psychiatrist; here the unaided historian will stumble. When the historian has set forth all that he knows, the psychiatrist alone can decide whether we are concerned with a normal or an abnormal person, although in many cases the evidence may be too defective to enable the decision to be made with certainty, and it has always to be remembered that the insane are often guided by normal motives, and that many morbid motives play their part in the sane. It is only when due weight is given alike to the exogenous and endogenous factors that history becomes truly scientific, and that we can see it in its causal relationships. It is even a matter of justice that we should be able to recognise that supposed exhibitions of wickedness and vice are really the product of a morbid psychic state. Moreover, all sorts of great social movements, such as revolutions and religious outbursts, can only be rightly understood when the psychiatrist has explained those elements and personal agencies in them which are of a morbid character, though we must always be on our guard to avoid the too generous application of pathological nomenclature to complex social movements. The more reckless invasions of psychiatry into these fields must be held in check, not by denouncing them, but by exercising that science in a thoroughly serious and cautious manner. We have to recognise the difficulties in the way, and that most pathographies so far produced must be regarded as tentative, although encouraging.

Returning to the discussion at the Strassburg Congress, Näcke

proceeds to justify the application of psychiatry to Christianity as not only in itself altogether legitimate, but even in the best interests of true religion, which can have nothing to fear from the truth. He protests against the description of Binet-Sanglé's great work, *La Folie de Jesus*, as "unscientific," although he is not prepared to accept offhand Binet-Sanglé's diagnosis. He discusses the matter at some length, and is inclined to lean towards the affirmative conclusion, but cautiously concludes that the data do not permit of a decisive answer, more especially on account of the late date of the gospels. Even in regard to Napoleon and Goethe, of whom we have very extensive and quite contemporary records, there is room for wide difference of opinion in the estimation of the mental state. A great hindrance to the construction of sound pathographies, Näcke points out, is our usual extreme ignorance concerning the subject's sexual life. "In future," he concludes, "all psychological-psychiatric investigation into the great men of the past must devote special attention to the *vita sexualis*. This demands, further, that the psychiatrist should possess a sound knowledge of sexology."

It will be seen that this weighty discussion of the wider outlook of psychiatry fittingly brought to a conclusion Näcke's long and strenuous labours in the cause of truth.

HAVELOCK ELLIS.

*Some New Conceptions in the Psychology of Thought* [*Di alcuni concetti nuovi nella psicologia del pensiero*]. (*Riv. di Psychol.*, anno ix, No. 3, May-June, 1913.) Westphal (of Bonn).

In this paper, which was communicated to the recent Congress of the Italian Society of Psychology, the author reports the results of an experimental research which he has carried out by Külpe's method of provoked introspection. Some preliminary remarks are devoted to explaining the importance in this method of the *Aufgabe*, i.e., the special order given to the subject of the experiment to determine the direction of his interest, as, for instance, that he is to attend mainly or exclusively to some one aspect of the stimulus. The experiments, of which only a general outline is given, lead the author to put forward the hypothesis of the existence of different degrees of consciousness, the mental content determined by the *Aufgabe* having different ways of being present to the subject's consciousness. These different modes or degrees are:

(1) The content is merely *given*; it exists only as an impression (in a lower degree the content is not even given, but only certain facts from which its existence may be inferred).

(2) The content is *observed* under the special point of view required by the *Aufgabe*.

(3) In the degree of *potential knowing* the result of the special direction is known, without, however, being formulated.

(4) In the degree of actual knowing the subject affirms what he has perceived.

These degrees of consciousness are not degrees of clearness; the higher grades have a more limited content; the different grades can be produced experimentally by directing the subject to adopt the appropriate attitude towards a determined fact, e.g., to perceive it fully, to

know it potentially, etc. According to Westphal the most important form of consciousness for the sequence of thought is the grade of potential knowing, which is indispensable for the succession of a long series of concepts.

W. C. SULLIVAN.

*Report of Experiments at the State Reformatory for Women at Bedford, N. Y. (Psych. Rev., vol. xx, No. 3, May, 1913.) Rowland, E.*

The object of Miss Rowland's experiments was to find out whether a practical set of tests could be devised which would, on application to a given girl, determine whether she was so deficient mentally as to be unable to profit by the training given in the reformatory. The tests included experiments in reaction time, memory, attention, and direct and indirect suggestibility. The different tests under each heading gave nine records in all. For each record a standard of normality was arbitrarily chosen, and every girl who fell below this standard was marked as failing in the test. A girl who failed in six out of the nine tests was regarded as subnormal. The several tests were selected from the very large material available in the American text-books and psychological journals, and did not include any new features. They were tried on thirty-five girls, of whom eleven were found on the basis of the results to be subnormal. In all but two cases this grading tallied with the estimate formed of the girls' capacity by the superintendent. A comparison with a number of girl students at two American colleges showed that nearly all the tests were successfully passed by educated subjects of similar age to the Bedford inmates. The method appears to be rather rough and ready, and it is vitiated by the arbitrary character of the standard. The choice of the tests is also open to criticism: reaction-time, for instance, is certainly not a reliable index of intelligence. At the end of the paper the author adds the interesting detail that since the date of the experiments a resident psychologist has been installed at Bedford.

W. C. SULLIVAN.

*Influence of Alcohol on Some Mental Processes in Children [Influenza dell'alcool su alcuni processi mentali nei fanciulli]. (Riv. di Psychol., anno ix, No. 3, May-June, 1913.) Sertoli, V.*

Signora Sertoli's experiments were directed to testing the effect of small amounts of alcohol on the attention and the memory. The subjects of the experiments were three school-children, a girl æt. 10, and two boys, æt. respectively 14 and 16. Attention was tested by Ebbinghaus's "combination" method, and memory by learning passages of poetry by heart. In each case the normal capacity of the subject was ascertained by a preliminary series of tests. The alcohol was given in the form of Marsala, but nothing is stated as to the doses, except that they were moderate and proportioned to the ages of the children. The experiments went to show that a slight degree of alcoholic excitement renders attention quicker and, so to speak, more intense, but less stable; also that it makes mnemonic fixation more rapid and more clear, but decreases retentiveness. It greatly augments, however, the power of evocation, producing an exuberant revival of latent impressions. Finally, it causes the diminution or disappearance of certain emotions, more particularly of such as restrict human activity, notably,

for instance, the emotion of timidity. These results are in several points in contradiction with the conclusions arrived at by Kraepelin in his well-known investigations, and this is the more surprising in that Effingham's "combination" method, which was employed by Signora Sertoli, is largely a test of judgment, and most observers have found that accuracy of judgment is decreased by alcohol. In Signora Sertoli's experiments, not only was the rapidity of the reaction increased, but the proportion of errors and omissions was notably lessened.

W. C. SULLIVAN.

## 2. Clinical Psychiatry.

*Periodic Dementia Præcox* [*La Démence Précoce à évolution circulaire*].  
(*Rev. de Psychiat. et de Psych. Exper.*, Sept., 1913). Halberstadt.

This article is in the main a criticism of Urstein's contention that manic-depressive insanity is not an entity, but often only a periodic form of dementia præcox. Dr. Halberstadt regards the characters of the attacks of manic-depressive insanity as of more importance than its periodicity. He holds that there are eight syndromes of symptoms which are peculiar to this form of mental disorder, each syndrome containing motor, ideational, and affective elements. He points out, on the other hand, the fact that Magnan demonstrated periodic phases of depression and mania in degenerates, so that periodicity is not a feature peculiar to manic-depressive insanity.

Kraepelin describes three intermittent forms of dementia præcox.

First, there is the "circular" variety. This opens with depression, accompanied by auditory hallucinations and hypochondriacal delusions. Later, acute attacks of agitation occur, with impulsive behaviour and mannerisms. Frequent and rapid alternations between calm and agitation may take place. Remissions may occur, but progression of the mental disorder is more common. Finally the scene closes with the dementia characteristic of terminal dementia præcox.

In the "periodic" form the attacks are remarkably regular, varying from alternate days to years in their incidence. The agitation is blind, stereotyped, and impulsive: the typical dementia eventually supervenes. Finally, in the "catatonic" form, initial depression with delusions and hallucinations leads to profound stupor. This in turn gives place to agitation, and eventually to terminal dementia.

In all three forms careful analysis shows that the *ensemble* of symptoms is that characteristic of dementia præcox. Dr. Halberstadt suggests that an intermittent form should be added to the recognised paranoid, hebephrenic, and catatonic form of dementia præcox.

Is it possible for manic-depressive insanity and dementia præcox to occur together? Though descriptions of cases suggestive of this superposition have been described, the writer considers the phenomenon to be sufficiently rare to be neglected in practice. He concludes with the remark that it is useful to remember that manic-depressive insanity is not the only mental disorder which develops intermittently.

H. W. HILLS.



*Carbon Monoxide Poisoning* [*Intoxication par l'oxyde de carbone*]. (Bull. Soc. Clin. Ment. Méd., April, 1913.) Truelle, M. V.

This is the case of a man, æt. 56, who, with his wife, was poisoned during sleep by escape of gas from a defective stove. The wife died after an illness of about a fortnight. The man was at first little affected—in fact he went to work the day after the accident. A few days later, however, a condition of progressive stupor set in—he became apathetic, incapable of attending to his work, he lost his memory, and showed no distress at his wife's condition and subsequent death. When admitted to the asylum, three weeks after the accident, he was apparently quite demented, incoherent, turbulent, and dirty in habits. He was pale and tired-looking, with unsteady gait, tremulous tongue, exaggerated knee-jerks, normal plantar reflex, and no disturbance of pupillary reactions or sensation. He was constantly wet, and his bowels were very constipated; there was nothing abnormal in heart, lungs, or urine. He was quite indifferent to his surroundings, his attention could not be fixed, his face was expressionless, and his bearing apathetic. Complete disorientation in space and time was evident, but he seemed to understand what was said to him. In about two months a distinct improvement was noted, his memory began to return, and his habits were no longer faulty; his health also rapidly improved, and his reflexes returned to normal.

The case is interesting as showing that a condition simulating a grave and incurable dementia may result from CO poisoning. This gas, beside the effect which it produces on the red blood-cells, also has a very destructive action on the cells of the liver, and as the patient in the case under notice was an alcoholic, it is probable that his liver was more than usually susceptible to its toxic action.

This secondary hepatic toxæmia is capable of initiating a toxic encephalitis and myelitis of more or less rapid evolution, with manifestations more or less grave, permanent or transient, according to the time of its onset, the extent of the lesions, and their tendency to progress or to disappear.

In such cases, then, it is wise to give a guarded prognosis, and not to despair of improvement, even when an apparent dementia is present.

W. STARKEY.

*Unilateral Clonic Tremor in a Case of Tabetic General Paralysis* [*Tremblement clonique à prédominance unilatérale au cours d'une paralysie générale tabétique*]. (Bull. Soc. Clin. Ment. Méd., June, 1913.) Marchand and Petit.

This is the case of a female patient, æt. 56, who was the subject of typical general paralysis of the tabetic type. There was no heredity of insanity, etc. She had a miscarriage, but denied syphilis. The usual motor and mental signs of general paralysis were present, but in addition a marked tremor, amounting to a continuous clonus, affecting the right leg. This persisted for the five months prior to her death. At the autopsy, besides the classic evidences of general paralysis, there were found atrophy of the motor cells of the anterior horns, marked sclerosis of the posterior columns, and a lesser degree of sclerosis of the

lateral columns, more marked on the right side of the cord. Such cord changes have been described by various authors, but the pathology of clonic tremors is still far from settled.

W. STARKEY.

### 3. Treatment of Insanity.

*The Refusal of Food and its Treatment [Traitement de la Sitiophobie]. (Bull. de la Soc. de Med. Ment. de Belg., Feb., 1913.) Quintens.*

The various causes of refusal of food divide themselves into two great groups—the psychical and the physical. It is important, if one wishes to be successful, to treat each individual case on its merits. To ascertain the cause is the essential first step. Many cases improve upon the simple treatment of rest in bed; an œsophageal tube will convince the hypochondriac that the passage to his stomach is not blocked up, and so on.

Of the physical group the treatment varies with the cause. Washing out the stomach with a weak alkaline solution often gives good results, and may be continued for several days. If, however, it be thought necessary to give the patient something, the writer advocates sugar and small doses of alcohol, the latter especially in depressed cases. Sodium chloride, by causing thirst, frequently makes the patient take liquid nourishment.

When other methods fail, there is left as a means of treatment the injection of artificial serum. This is best done subcutaneously. It should be given in 20-oz. doses twice a day. The only contra-indications are lung congestion, with a high-tension pulse. Thirteen cases exhibiting various mental conditions are described, all of which, with one exception, greatly benefited by this treatment. The author does not detail the method of making the serum.

COLIN M'DOWALL.

*The Therapeutics of Mental Diseases [La Thérapeutique des maladies mentales]. (Le Prog. Méd., Sept. 6, 1913.) Damaye.*

The writer of this article assumes that all mental diseases are due to toxins, and should be treated therefore on medical and surgical lines. Those due to exogenous toxins are similar to bacterial infections, whilst the remainder, as caused by endogenous toxins, belong to the group of metabolic disorders. In general pathology lies the hope for the cure of insanity; attention paid to psychical disorders only obscures matters.

He proceeds to give a rough summary of several cases, which is designed to show that treatment in the earliest stages prevents mental symptoms from becoming chronic, together with the onset of physical cachexia. Unfortunately he adheres rigidly to his axioms, and his description of the mental states of his patients are so meagre that definite conclusions from the data are unwarrantable. All the cases quoted are tuberculous apparently, and the treatment is directed to this disease, special reliance being placed on raw meat and tonics. Dr. Damaye records considerable mental improvement in all the cases, but omits to state if he considers the mental symptoms due to the tubercle bacillus. Similar treatment of syphilitic patients apparently produces like results. His protest that psychical investigation has led to too great concentration of attention upon manic-depressive insanity and dementia præcox is worthy of note.

H. W. HILLS.

#### 4. Sociology.

*Child Suicide in Italy* [*Il suicidio dei ragazzi in Italia*]. (*Arch. di Anthropol. Crim.*, vol. xxxiv, fasc. 1 and 2, 1913.) Sacerdote.

This paper is a valuable contribution to the literature of juvenile suicide. It is based mainly on statistical material referring to actual suicide, but the author has also been able to utilise statistics bearing on nearly 2,500 cases of attempted suicide admitted during the period 1901-1911 to the Ospedale Maggiore of Milan. In this connection he expresses the wish—which English students of this question will certainly share—that the authorities who are responsible for the publication of official statistics would see fit to give the same detailed information with regard to suicidal attempts that they already give for deaths by suicide. Dr. Sacerdote states that this is done in the Russian statistics, and there is certainly no reason why the necessary data might not be included in the official returns in other countries. A further source of difficulty which the author has met with in the statistical study of the subject is that in the Italian tables there is no subdivision of cases of suicide at ages under fifteen years; the statistics of many other states distinguish two groups, *viz.*, up to ten years of age and from ten to fifteen.

From his analysis of the available data Dr. Sacerdote arrives at the following conclusions :

(1) The majority of the social factors which are of so much importance in adult suicide have but little direct influence on suicide in the young. The only influence of this order which appears to be operative alike in juvenile and in adult suicide is that of urban life; nearly all cases of child suicide occur in the large centres of population.

(2) While in Italy, as in the other European countries, adult suicide has tended of recent years to increase in frequency, the rate of juvenile suicide has been almost stationary, or at all events has not shown anything like the upward movement recorded in other Continental states.

(3) Home conditions involving material privation or moral suffering exercise a considerable influence in promoting juvenile suicide.

(4) Educational over-strain does not appear to be an important factor in causing suicide in Italian children.

(5) In juvenile, as in adult suicide, there is a marked predominance of males; during the twenty-four years, 1886-1909, of 236 suicides at ages under fifteen, 178 (67.5 *per cent.*) were in boys and 58 (32.5 *per cent.*) in girls.

(6) The methods of suicide used by the young are similar in character, and in the order of their preference, to those employed by adults.

Dr. Sacerdote has utilised his clinical experience in cases of children attempting suicide to throw light on the psychology of the phenomenon, and he makes some interesting remarks on this aspect of the question. He notes, for example, that juvenile suicide is often related to religious and mystic pre-occupation, especially in children of neurotic and unstable stocks. His observations also confirm the current view of the predominant influence of the physiological changes of puberty in causing suicidal impulses in the young. A less familiar point to which he draws

attention is the occasional—in his opinion the frequent—occurrence of cases where acts which appear to be definitely suicidal are really due to thoughtlessness, and inability to realise the consequences of conduct, as, for instance, when a boy, whose hat has blown off, throws himself into the river to recover it. The paper includes summarised notes of twenty-four cases of suicidal attempts in children. W. C. SULLIVAN.

## 5. Asylum Reports.

### *Some English County and Borough Asylums.*

*Brighton Borough.*—The Committee report the retirement of Miss Buckle, after fifty-two years of work as Matron of the Institution. We should imagine that this is a record in respect of service in one office. Miss Buckle's quiet efficiency and pleasant personality are well known to many interested in asylum matters outside Haywards Heath. The Committee is in the happy position of possessing accommodation considerably in excess of its own requirements. It is able to pay out of the profits arising thereby for all repairs and alterations, insurance, and superannuation falling on the building and repairs account, and have a balance in hand of £6,368 8s. 11d.

*Buckingham County.*—The admissions during last year were approximately only two-thirds of those of the previous year, while the recovery-rate showed a substantial improvement. Notwithstanding these favourable facts, a decrease, to the extent of one-third, in the death-rate brought about that the population on December 31st was practically the same as at the same day in the preceding year. Still, the fact remains that occurring insanity shows a large decrease. These figures are a good example of the need to take into consideration more than mere population when estimating alleged increase of insanity in an area.

*Cardiff.*—Some extensions have been projected here. The plans sent up received some criticism, resulting in delay. That delay has caused the original estimate to be increased by 10 *per cent.*, to meet advance in labour and material during the time consumed. It may be wondered whether the extra cost is met by improvement in the usefulness of plans submitted by those who are fairly expert in asylum requirements.

Dr. Goodall gives an interesting analysis of the heredity found among the direct admissions, in which a reliable history could be obtained. It occurred in 46, or 46 *per cent.*, of such cases. Summarising these, we find that single heredity, *i.e.*, heredity of one factor, occurred in 31; of these inheritance of insanity claimed 11, of alcohol 6, of allied neurosis or phthisis 14. In the other 15 the heredity was dual, inheritance of insanity and alcohol 5, of insanity and neurosis or phthisis 5, of alcohol with neurosis or phthisis 5. The effects of duality in heredity are commented on later, when we deal with Dr. Mott's inquiries.

With regard to increased laboratory facilities Dr. Goodall writes :



In my last report I expressed the hope that the extension of the pathological laboratory would be completed by April, 1913. I am glad to be able to state that this work has now been completed. The additions comprise (a) a slight increase in the size of the existing laboratory; (b) a separate working room for the pathologist (Dr. Scholberg); (c) a laboratory for physiological research; (d) a separate room for sterilizing apparatus. An excellent fume-chamber, common to the two laboratories, and a commodious ice-box have been erected. A stout-walled brick chamber has still to be built for accommodating a powerful centrifuge. The physiological laboratory is intended, like the chemical one, for a single worker. In the pathological room we have now separate working tables for three workers, apart from the special accommodation for the pathologist. All necessary fittings in the way of tables, sinks, cupboards and shafting have been provided out of the available funds. These are also sufficient to enable us to purchase a suitable autoclave and two centrifuges. The accommodation for experimental animals has proved quite satisfactory. Up to the present only rodents have been used for research work.

Dr. Goodall prefaces his report on the research work done as follows :

Before proceeding to give an account of the research work carried on during the year, I would wish to emphasise strongly the importance of collaboration between workers in different (allied) branches of scientific research; this has been brought out notably during the past year in our work here. The advantage of guidance in chemistry and physics to those engaged in pathology and clinical medicine, and *vice versa*, has been great: and I cannot conceive how we now should manage without such collaboration. This is merely a realisation of the best continental practice. Our experience is a further and strong argument for realising at as early a date as possible the appointment of our third research-worker, namely, the physiologist, of whose help in the problems of metabolism we have felt the need. I do not disguise from myself that it will probably be difficult to obtain a suitable man, but I have every confidence in ultimately finding him.

I submit the following account of research work which has been in progress during 1912 :

He and Dr. Scholberg have for some months made systematic weekly examinations by the Wassermann method of the blood and cerebro-spinal fluid from cases illustrative of all kinds of mental disorders, in pursuance of similar work reported by them in the *Journal of Mental Science*, April, 1911. These examinations are still conducted week by week. They propose to report at the International Congress of Medicine, London, 1913, their further observations. The observations upon mental cases have been systematically checked by parallel observations upon cases of syphilis in different stages from the Cardiff Infirmary and others from private practice, and on this account it is believed that the results have an exceptional interest and value. They go to show that a higher proportion of positive reactions in the blood-serum is obtained in cases of florid syphilis (including cases in the second stage) than in those of general paralysis. In cases of tertiary syphilis the results are more in harmony with those of general paralysis. By systematically working with three strengths of amboceptor (the fluid to be tested), it is shown that in some cases of general paralysis a positive reaction can be obtained with higher concentrations of amboceptor when such is not obtainable with the usual one (a procedure recommended by Nonne, Holzmann and Eichelberg). This applies to the serum as well as to the cerebro-spinal fluid, but more especially to the latter, the reason probably being that amboceptor is present in lesser quantity in the latter. Different strengths of amboceptor were in like manner used in cases of insanity other than general paralysis, with the result that a negative reaction sometimes became positive in the serum and the cerebro-spinal fluid with increased amounts, though not so frequently as in general paralysis as far as the latter fluid is concerned. Nevertheless, it is evident that the delicacy of the reaction is diminished when amounts of amboceptor above two-tenths c.cm. of a solution of 1 in 10 are employed. These observations bear out the reliability of the Nonne-Apelt protein test, and show, on the whole, that pleocytosis (*i.e.*, increase of cells in the cerebro-spinal fluid) is less constant in general paralysis than increase of protein.

The Wassermann test has proved useful in the diagnosis of certain difficult cases of organic disease of the nervous system.

Further work has consisted in the continuation of observations upon the agglutinating and opsonic properties of the blood-serum of cases of acute mania and melancholia upon the intestinal anaërobes, *B. putrificus* and *B. enteritidis sporogenes* (Klein). The work shows that no agglutinin is formed in respect of these organisms, and that such cases exhibit a lower opsonic index than do control cases. This latter fact may be merely a special illustration of a general tendency to reduction of opsonic power of the blood-serum in these cases, not by virtue of any special pathological condition associated with insanity, but on account of mere reduction of vitality. There is not sufficient experience yet available as to the opsonic index in respect to the more common pathogenic organisms, in cases of insanity, to allow of a definite statement on this point. Incidentally, this work has brought out an interesting fact as to the relative powers of ingestion of organisms by homologous and heterologous (*i.e.*, in respect of the serum employed) leucocytes, which will be reported in full elsewhere, and which is certainly of much therapeutic interest theoretically.

Dr. Stanford, the research chemist, reports :

The chief lines of investigation which have been pursued during the past year comprise the further study of the phenomenon of the appearance of indigo-producing substances in the urine of the insane, the perfecting and testing of the new dilution colorimeter referred to in last year's report, and, in particular, a series of researches on the cerebro-spinal fluid of the insane.

In regard to urinary indigo, attention was principally directed to the isolation of the indigo-producing substances, which, as was mentioned in last year's Report, is interesting from many points of view, and is absolutely necessary for the establishment on a sure basis of the quantitative methods which I have devised, and which I hope eventually to apply to the systematic analysis of the urine of the insane. Unfortunately, the isolation of these substances by the methods which, in the past, have proved equal to the task of isolating similar compounds from the urine of animals in which the amount of indigo had been artificially increased, is impossible in human urine, both by reason of the much smaller concentration of the indigo-forming substances and because of their much greater instability, which has already been described in former reports. This instability has, in fact, prevented so far the isolation of these compounds, and the result of much laborious investigation has only been the devising of a new and convenient method for their extraction from urine—an advance which is nullified by the spontaneous decomposition of the extracted substances in the course of a few hours. This problem is, therefore, still under investigation.

In collaboration with Dr. E. Barton White the action of several common intestinal bacteria on media containing indole has also been studied. In no case was the production of any indigo-forming substance observed, and this is an additional argument against the common assumption that "indicanuria" is necessarily connected with excessive intestinal putrefaction.

Exhaustive tests of the new dilution colorimeter have shown it to possess the advantages claimed for it in last year's report.

The principal occupation of the year has been the study of the cerebro-spinal fluid in cases of mental disease. The original object of the work was a re-examination of the disputed question as to the occurrence of choline in the cerebro-spinal fluid in general paralysis. This has been affirmed by Donath, Mott and Halliburton and others, and denied by Kauffmann and others. With the aid of fluid collected *post-mortem* for some two years previously, a repetition of the experiments of previous workers was undertaken, and the result of these and other experiments proved that choline is not found in the cerebro-spinal fluid of general paralytics or other individuals. The statements as to its occurrence were shown to be due partly to confusion with ammonium chloride, and partly to the production in the fluid, after removal from the body, of a substance which gives many of the alkaloid reactions shown by choline.

The application of new methods to the analysis of cerebro-spinal fluids obtained during life has enabled me, however, to differentiate between the cerebro-spinal

fluids of general paralytics and those of other patients, and the regularities observed promise to afford means of diagnosing that disease in doubtful cases. Although a considerable number of cases has been examined, no incongruous results have yet been obtained. These and other researches (which are now in progress) may throw light on the progress of mental disease also in cases other than those of general paralysis.

Dr. Scholberg, the pathologist, strongly supports Dr. Goodall in the statement that for the most perfect inquiry an experimental physiologist should be added to the staff, so as "to record the standard chemical, physiological and pathological data to be found in any given type of insanity." When we add to that accurate clinical observation and the record of results following treatment dictated by research, it may be confidently expected that success will attend a concerted and well-devised attack on the mysteries of psychoses, and we will venture to add that the Committee of Cardiff Mental Hospital has already, by its liberality of view, placed psychiatry under such deep obligations that it will feel impelled to do its best to complete that which it has begun. Speaking, perhaps, *ultra vires*, we would point out that at Cardiff there is a most fortunate conjunction of earnestness and liberal view on the one hand with earnestness, indefatigability and skill on the other hand. It is just in times of such conjunction that enormous steps forward are made, and no one can deny that a great advance in knowledge already has been made under these circumstances.

Dr. Barton White has done much bacteriological work on the cerebro-spinal fluid, and, with Dr. Stanford, has carried on an inquiry into the question whether the indigo-forming substances of urine can be produced by intestinal bacteria. The work is not far enough advanced to afford material for conclusions.

We need make no apology for producing such long extracts as we have made from the report. Many of the facts related have found publicity in other directions, but they should be also chronicled in this the natural home of psychiatric science. The importance of the facts being acknowledged, it is proper that they should be clothed in the *ipsissima verba* of the reporters.

*Derby Borough.*—Of the ninety-eight admissions eight only had been resident in the asylum at some previous time, and had been discharged as recovered. The average interval between discharge and readmission was three years and nine months. In 50 *per cent.* of the direct admissions suicide had been attempted or threatened, and in 30 *per cent.* homicide had been threatened or actually attempted in the shape of violent assaults. As these cases formed about one-sixth of the population, it is evident that Dr. Macphail had no light responsibility.

*Derby County.*—We note that, in referring to the occurrence of dysentery and severe diarrhoea at this asylum, the Visiting Commissioners say that it seems to show a not quite sanitary condition of the asylum. This opinion cannot be received without considerable qualification. There may be some asylums where the sanitary condition is so poor that anything may occur, but without any doubt whatever these maladies may suddenly appear in the newest asylums, where sanitation

is of the best and most recent type. We know too much nowadays about "carriers" to throw any suspicion on the sanitary reputation of any place.

The Committee state that, owing to excess of patients over and above their accommodation, they have 135 patients boarded out in other asylums. They now cannot find room for their males, after applying to practically every asylum in England for it. It seems but the other day that the country had almost overbuilt itself. London has over 400 male patients accommodated in outside institutions, a condition which will be relieved, for a time at any rate, when it has built its new asylum. The Derbyshire Committee has commenced arrangements for building an additional asylum.

*Dorset County.*—Dr. MacDonald makes a strong appeal for a convalescent home. He thinks that so much is now done for acute cases that the time has come for the claims of the convalescents to be considered. He points out that such a building need not be expensive, as simplicity, quietude and liberty only is called for. We entirely support his idea. Authorities talk much and largely of classification, but it stops short just when it is most wanted, and when it is likely to be remunerative. In many institutions other than rate-paid asylums this same procedure is adopted with the best effect. In instancing the errors that creep into census returns dealing with mental deficiency, he makes the point that information wants editing, friends not caring to disclose the truth. He visited a cottage where there were seven children in family. Of these he was able to mark four as definitely deficient, yet the mother told him that none were so recorded in the census. The notable increase in general paralysis he attributes to increasing population at Weymouth and Poole, the other parts of the county remaining free.

*Hants County.*—A Local Government auditor's report often contains interesting little points, these sometimes being rather niggardly, though probably correct. In this report there occur the following: The auditor takes exception to a payment made for carriage of the gardener's furniture on his taking up the service, on the ground that the rules do not provide for it, and the contract of service does not mention such a provision. No National Health Insurance deductions have been made in respect of those officers who have contracted out of the Superannuation Act. These cases are not covered by the Insurance Commissioners' certificate of exemption. The knotty point has been referred to the Commissioners, who had not announced their opinion at the time of report. He will disallow in future any sum paid for stamps used for receipts for salaries. An auditor might sometimes, without great shock to conscious probity, follow Nelson at Copenhagen, and put his telescope to the blind eye.

*Kent County, Barming Heath.*—In adverting to the increasing shortness of accommodation, Dr. Wolseley-Lewis tells his committee that before they think of providing more it will be worth while to study the possible effects of the Mental Deficiency legislation, which at that time



was in the making only. We shall discuss this question when dealing with what Dr. Fitzgerald has to say at Chartham on the same subject.

Dr. Wolseley-Lewis reproduces in his report much of what he said at the Darenth meeting of last year on the question of criminal lunatics. The grievance to which he gives utterance acquired the more point by his house being burgled by a criminal and ungrateful patient. But apart from this he has done good service in bringing forward in precise and reasoning form the hardships attaching to the continued dumping of undesirables on local authorities by the Home Secretary. As will be seen in our remarks on the London report, the Home Secretary has been moved to emit a declaration, which, however, is not satisfactory in all respects. The only method of producing a proper resolution on his part is to keep on worrying at him by deputations and remonstrances. The present practice is indefensible in that, as Dr. Wolseley-Lewis shows, it is wrong to the other patients; it is wrong to the patients themselves, who get much extra and inconvenient attention; it is wrong to the public in that there is more chance of a dangerous criminal effecting his escape from Barming Heath than there is from Broadmoor; finally, it is unfair to the staff to have the responsibility thrown on them, when there are such places as Broadmoor specially built for efficient control. It is not only indefensible, but very mean, that the central authority should force the local authorities to find accommodation instead of building itself. We think that it is very unlikely that the Home Office would for long continue to be obstinate if the question were constantly kept before it in Parliament and by remonstrance on the part of all county and borough councils.

Dr. Wolseley-Lewis feels very satisfied by phthisis taking quite a humble position in the list of death causes, instead of being at the top as formerly. He attributes the happy fact to the increased ventilation and more open windows.

*Kent County, Chartham.*—Dr. Fitzgerald notes that since the passing of the Superannuation Act there has been a remarkable decrease in the voluntary resignations among the staff, with the accompaniment of slow promotion, which he thinks to be not altogether an advantage. The fact of longer service, however, proves the truth of one of the contentions pressed by the Pensions Committee when they foretold that it would be brought about by an Act. The drawback was not then a subject for prophecy. He presses for provision being made for the senior A.M.O. to be a married man. Commenting on the Mental Deficiency legislation, which was then only in the Bill stage, he does not look for as much assistance in the matter of accommodation as Dr. Wolseley-Lewis does, and he thinks that the legislation must not stand in the way of building. He points out truly that the asylum candidates for treatment under the Act, when passed, would be the last to be accepted. And we may say with certainty that the last to be taken over will have to wait a very long time. The amount of money that can be spent is trifling in comparison with what will be called for in order to carry out the Act in full. The amount of money will stand thus—every sixpence that comes from the Parliamentary grant will have to be covered with another sixpence by the local authority; in addition, local authorities can call up a rate not exceeding

one halfpenny in the pound. As is known, the grant is only £150,000 for all England and Wales. It may be distributed rateably, but probably it will be given by "pick and choose," as is the case with the Road Board Grant. If the latter happens, the more needy localities will be served before the richer, and in that case Kent is not likely to get much at present. The available money being therefore strictly limited in amount, the first claim will be in respect of those classes for whom there is absolutely no provision at present, and will be exhausted long before the claims of those now provided for can come up for consideration. In time, no doubt, the provision both by grant and by rate will be extended, but that will not be till the Act is in full working, and till it can be seen how far the powers conferred by it can be carried out with safety and advantage. If, however, the Guardians care to take the matter into their own hands, as there is power for them to do to some extent, and as there seems to be some disposition to do, there may be some relief in the future. There is another important factor to consider: When both the doctors made their reports the Bill included, among the defectives subject to be dealt with under the Act, the "mentally infirm, through old age, drink, etc.," that is to say a form of acquired deficiency. Since then, however, better counsels have prevailed and these old people have been left out, and the operations of the Act will relate to deficiency from birth or early age solely. We should imagine that this limitation would considerably affect Dr. Wolseley-Lewis's estimate of 300, which at the time of his report he could find at Barming Heath as suitable for treatment under the Act. There may be, of course, a few old cases which are mere protractions of early deficiency, but they are probably insignificant in number. Thus it will be well not to indulge in too great hope of relief to asylum accommodation from this Act.

We note that a table has been inserted for the first time, showing the areas from which the patients are drawn for each of the two asylums. We trust that this will be followed in time in all cases where there are two or more asylums under one local authority. It is useful to know whether patients come from ordinary country parishes or unions, or from those of an urban nature, with all the variety and dangers of trades. It would be a little more useful still if the information which is given by unions could be amplified by annexing the names of large towns, which are often lost sight of under the name of their union. Chartham, a town of much lunacy potentiality, is difficult to place in this list.

*London City.*—Dr. Steen writes enthusiastically of the service of verandahs, and wonders how they ever got on without them. They are used night and day. The best case for them in his view is the acutely maniacal case. He has often seen one that was noisy, excited and troublesome in a padded room become quiet and go off to sleep when removed to the verandah.

In general paralysis of the insane we employ urotropine as a routine measure, and the general impression is that it is of distinct value in the treatment of this disease. It is, of course, possible that the type of the disease is changing, but it is remarked that congestive attacks are less frequent, that remissions occur more often and are more prolonged, and that the general condition of the patients is less degraded than formerly.

LX.

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This supports the opinion expressed by Dr. Harvey Baird in a paper published in the January number of the *Journal of Mental Science* of last year.

*London County.*—The present volume bears testimony to the ever-increasing responsibility attaching to the work of the Asylum Committee, and, we think, also to the success which attaches itself to its administrations. To the student of psychiatry and of its ministerial details the volume is increasingly serviceable from its thoroughness and completeness. No detail which can afford any information is missed, and the quantity of material handled affords a really valuable guide to deducible facts. The only drawback in taking those facts as representative of general truth is that the report deals only with urban results. But the *Annual Report of the Commissioners in Lunacy* supplements the London County's returns, both being now based, for statistical purposes, on five-year averages for the most important purposes, for which Mr. Keene has to be thanked in respect of this Committee's share. The main report shows that, while the accommodation has undergone some slight increase, this is considerably offset by the increase in population, which is greater than it has been for some years past. But this increase is not entirely due to the operations in the asylums only, but is carried by the fact that the increase of all London lunacy has been absorbed by the asylums alone, the Metropolitan Asylums Board and the workhouses not having taken up their usual share. The Committee draws attention to the absurd duplication of authorities in lunacy matters. This allows justices the power of exercising a discretion as to where the patients shall be put. It points out in this connection that, while one parish has 83 *per cent.* of its lunacy housed in asylums, another has only 57 *per cent.*, the mean *ratio* of all parishes being 74 in County and 26 in Metropolitan Board asylums. The only reason for this disparity that can be assigned is the failure of justices to recognise properly the differing purposes for which the two sets of institutions are designed. The Committee is a little sore that the recommendation made by the Royal Commission in favour of there being only one authority for London has not met with enactment. As said, the total lunacy of London has increased during 1912 in point of number of those under care, but it does not, in the opinion of the Committee, prove a real increase of occurring insanity. But whether this be so or not, the want of asylum accommodation is pressing, and it is recognised that, when the eleventh asylum is opened five years hence, it will indeed be required. The great trouble in accommodating the excess is the difficulty in finding room elsewhere. We find much the same complaint in the reports of other asylums which have patients to place out. The task of selection, when accommodation is found, is enhanced by the increasing stringency of conditions as to the nature of the cases to be thus dealt with, and by the very proper insistence of the Commissioners that only those patients should be sent out who have no friends who can or do show interest by visitation. The cost of maintenance is likewise creeping up, but we suppose that this is less on account of the law of supply and demand than on account of the advanced price of food and necessaries. It is a fact that the population of the London

area is decreasing, but the Committee derive but little encouragement from this, for it is pointed out that the wage-earners, taking advantage of increased transit facilities, settle outside the boundaries, while the feeble-minded and the recidivists are perforce left behind, keeping the lunacy ratio up to a high level.

We are glad to see that a point, to which we have frequently drawn attention as a possible source of knowledge as to the effect of environment, is now being discussed. It is the wide variance in the parochial proportions of declared lunacy. The Strand still maintains its position of having the highest proportion of lunacy to population, while a very low proportion is found at Bethnal Green, where one would suppose that the grinding strenuousness of life would have the direst effect. Dr. Mott, as will be shown later on, is making most effective and scientific use of such opportunities of inquiry.

The Committee is at last able to report substantial advance with the Maudsley Hospital. The levels of the site have been taken, and the plans have passed the authorities. Tenders were to be at once invited at the time of the report.

The evergreen question of the admission of criminal lunatics into county asylums engaged the attention of the Committee. Correspondence with the Home Office procured the following explicit statement :

The Secretary of State has expressed his opinion that it will always be desirable to send to county asylums those prisoners who become insane while undergoing short sentences, and who, therefore, will soon cease to be "criminal" lunatics, in the technical sense that they will no longer be chargeable to the Prison Commissioners. He expresses the hope, however, that with the opening of new State asylum accommodation it will not be necessary, save in exceptional cases, to call upon local asylums to receive criminal lunatics who are certified while undergoing a sentence of penal servitude, or persons who are found insane by the verdict of the jury, and are likely to be detained indefinitely as King's pleasure lunatics.

On principle this pronouncement must be taken to be satisfactory. But in operation it might prove to be too precise, since there are many undesirable lunatic rogues happy in not getting heavy sentences, who should be kept away from more honest invalids, while, on the other hand, there are many unfortunate baby-killers whose proper place would be under the less strict *régime* of a county asylum.

The Committee acknowledges the assistance received from the Education Committee in the inquiry into family history which is being so strenuously made under Dr. Mott's supervision. The connection of asylum and educational committees will assume very great importance under the Mental Deficiency Act. If the Act has in time the hoped-for effect of abolishing the adult deficient at large, by catching him early and keeping him indefinitely, the Education Committee will be the prime detectors and suppliers of patients. It is much to be hoped that everywhere the best will be extracted from the Act by harmonious and sympathetic interaction of all the authorities concerned.

The Bill (Mental Deficiency) received considerable consideration at the hands of the Committee, which reports several amendments to be proposed, but as the Bill has become an Act there is but little need to consider such proposals. Some, indeed, did not survive passage through the Council.



The deportation of alien lunatics goes on steadily, but the Home Secretary gives notice that instead of the State, as hitherto, bearing the total expense, he will ask for a contribution of one-half from the local authority when the cost exceeds £15. The Committee fears that, as such a contribution must be sanctioned by the Local Government Department, the demand may hinder or prevent the removal of alien lunatics.

The Home Secretary is not always "difficult." He has permitted the continued use of some temporary buildings at Hanwell which were originally allowed on the understanding that the use should cease at the end of fifteen years. It is dreadful to think what would have happened if he had refused the permission. With the present difficulty of placing patients, to find room for 400 would have been a heart-breaking business.

Some substantial additions have been made to the remuneration of the staff. For male attendants it is provided that after five years of good and efficient service he shall receive a stripe, which will carry with it an extra annual payment of £2 10s., while at the end of another five years he will have another stripe, bearing an equal increment of wages. If either the conduct or efficiency deteriorates the asylum sub-committee can deprive him of one or both stripes and the attached pay. This seems to be an excellent plan. Good-conduct money affords a very satisfactory point of attack for punishing a servant when an offence, not quite sufficient to warrant dismissal, yet requires the infliction of something that will be felt.

The Committee, recognising that food is part of the remuneration which they undertook to give on engagement, now provide that it shall be paid for on single days of leave when absent.

Henceforth not only first assistant medical officers may marry, but the Committee is providing that the same facility shall be extended to the second also. This forms a valuable precedent, which doubtless will be made use of by the Status Committee.

The reports of the medical superintendents, taken generally, chronicle even and satisfactory history, and the same may be said of the reports by the Visiting Commissioners. We are much struck in reading the latter with the increased tone of sympathy with men who have difficult and serious work to do. We feel sure that this must be right, as it not only is a fitting recognition of good work, but has the great advantage of setting off, by contrast, any reference to matters requiring more or better attention, thus increasing readiness of spirit to execute any improvement called for. We note particularly the frequent reference made to the excellent sick-nursing which obtains throughout the Committee's asylums. This reflects credit not only on the head that devises, but also on the hands that do.

We take the following from the various medical reports.

*Bexley.*—Dr. Stansfield writes :

During the past year I have been carrying out an investigation into the relationship of blood-pressure to sleep and the effects of certain hypnotics upon the blood-pressure. My inquiry is not yet completed, but my observations so far tend to justify certain general conclusions. First, that sleep is invariably associated with a lowering of the individual blood-pressure, varying in different individuals. Second, that

lowering of the blood-pressure by any means tends to produce sleep, and its converse holds true, that anything which causes a rise in the blood-pressure renders sleep impossible. Third, that the principal hypnotics in general use, such as amylene hydr., paraldehyde, chloral hydr., pot. brom., all reduce blood-pressure when given in medicinal doses. Fourth, that the recumbent position in twenty-minutes' time produces a lowering of the blood-pressure, varying in four individuals observed from 4.8 *per cent.* to as much as 15.2 *per cent.*

The necessity for a sufficiency of sleep to maintain a normal mental balance is generally not appreciated, and it is commonly thought that, within limits, time taken from sleep is so much gained; but this is a great fallacy and leads to mental reduction, retarded mental reaction, volitional defects, and often absolute dementia. Systematic insufficiency of sleep as a cause of insanity does not receive that recognition which it should. I could cite numerous cases which have come under my care from this cause alone. The race for pleasure, the curse of the age, from which all ranks in life suffer, produces its pernicious effects upon the mental and moral life of its votaries in a large measure owing to insufficiency of sleep. Particularly does this apply to the period of life during which mental and physical development chiefly takes place, *i.e.*, from infancy to adolescence, and I am fully persuaded that a large number of the feeble-minded cases which come under my care have never had the chance to develop into normal individuals, owing to systematic insufficiency of sleep, and particularly so when a child has started life with a neurotic, insane, or feeble-minded heredity. The importance of a sufficiency of sleep ought to be taught in all our schools, and insisted upon when there is a faulty heredity.

Dr. Stansfield laments the late arrival of many of his cases, only 36 *per cent.* coming within three months, while 34 *per cent.* came after twelve months elapsing from commencement of the attack. These facts read queerly with a definition of 345 of 372 admissions as "recent" in the opening of the report. This is an obvious slip for "direct." Noguchi's and Nonne-Apelt's tests are used as a matter of routine here as in some other London asylums in all cases suggestive of syphilis or general paralysis, while the Wassermann test for Bexley cases is applied at Claybury. The results of tests on cerebro-spinal fluid closely resemble those on serum, but with occasional puzzling contrarieties. Searching for the causes for these differences may, one would think, lead to further valuable information.

*Claybury.*—Dr. Robert Jones writes :

The discovery in the scientific laboratories of America of the *Spirochæta pallida* in the layers of the cortex of the brain has been the most important event of the year in regard to general paralysis, but the present belief that salvarsan injected subcutaneously or intra-venously does not pass into the cerebro-spinal fluid is not encouraging as to treatment. I have used salvarsan for the relief of general paralysis within a few weeks of the first known onset of symptoms, but without any actual benefit, and it is possible in view of the discovery mentioned that we may have to reconstruct our ideas and terminology as to what may be syphilitic and what may be para-syphilitic lesions. It is not unlikely that para-syphilitic ailments may have to be abandoned as such, although at present we know that there are serological differences between symptoms which are described as syphilitic and those which are para-syphilitic, of which general paralysis and tabes are examples.

Dr. Candler trephined a male patient for traumatic epilepsy, at the site of an old scar over the left frontal region. A small cyst was found and its contents evacuated. The patient made an uninterrupted recovery, but the fits still continued. Several other heavy operations were undertaken, with varying success. Dr. Jones has a real "neigh-

bour," Mrs. Johnston, who, in addition to frequent visits to the wards, invites the patients to have tea on her lawn. How much good this sort of kindness must do!

*Colney Hatch.*—Dr. Gilfillan notes: The proportion of general paralytics among the admissions was 8·84, a decrease of 1·90 on the preceding year; among the 59 male Jews admitted the proportion was 10·16 as against 25·5 last year. A history of syphilis was found in 15·38 of the total male admissions. Farm work continues to be a source of profit and mental benefit.

*Horton.*—Dr. Lord contributes some forcible remarks on the question whether dementia præcox shall be written down as an incurable disease, plumping his vote against incurability. We must confess to having the same predilections. Of course, the trouble commences with the inclusion of the word "dementia" in the term. There are really two questions at issue—is dementia incurable? and is that class of patient denominated by the compound term, "a being without hope," independently of terminology? As to the first, we beg to point out that there is not a particle of science involved; it is pure naked conventionalism. Our fathers and forefathers, with a limited insight into the principles of scientific classification, for convenience used dementia as a sort of ditch into which the incurable might be thrown and buried. They assumed that the mind, having once apparently taken its departure, could not return, and in those cases that obviously presented some chance of return they used one of the other broad terms. But as mental analysis became more and more stringent, it became evident that the conventional asylum picture of dementia is unsatisfactory. It has been seen that it is wrong to deduce the mental phenomena from the type of the disease, but right to build up the type from the observation of the phenomena. Let us start in this latter way and take the main mental affections which denote dementia, and regard them in all phases from the slightest up to the fully developed. Which of us does not at times feel and show those affections to a greater or lesser degree, after exhaustion from excessive mental labour, or shock, or from diet toxæmia and so on? If these phenomena were continued too far we should, as time went on, show just the same physical signs which are the result of abolition, or serious loss, of the great attributes of mind. In fact there are possibilities of all shades of dementia in every one of us, sane or insane, and so some of us recover quickly and thoroughly. When we get to the asylum we see just the same affections, to greater or lesser degree, as the result of various mental stresses. With those whom we call cases of dementia præcox there is generally a structural weakness, from heredity, which the more readily permits exhaustion, leading to the manifestations of incomplete dementia. Often these manifestations increase, so as to be the leading clinical symptoms, and then the term "dementia" asserts itself. Just as with us, so with such cases, the remedy of the underlying stresses leads to return of more forcible mentalisation, and with good luck the latter becomes whole and sound again. In this view there is no essential reason, apart from other clinical data, why any case should not acquire, even completely acquire, strength. Certainly such

cases as we are discussing do get perfectly well for the time, unless, of course, recoveries are held to establish wrong diagnosis. This latter possibility leads up to the question of classification, and there we get pounded at once. Every man knows what we mean by "dementia præcox," but when we compare notes no man knows what his neighbour really means by it. It is all very well to have broad clinical pictures, but when we come to judge the possibility of recovery by terms, we should have those terms set out most precisely. In the absence, as said, of all scientific guidance, we cannot be satisfied by pure conventionalism. Nothing short of an Act of Parliament would begin to procure precise definition, and then we should at once commence to drive coaches and six through the Act. In the meantime for ourselves we must continue to think that such cases can and do get well, at all events for practical purposes, in spite of the ticket attached to them. That we are not singular in holding this idea about dementia as a term is shown by the fact that among the recoveries recorded at the various asylums of the London area, there appear 27, 4 and 8 from dementia, primary, secondary and senile respectively.

The following extract from Dr. Lord's report brings before the Committee with convincing force the dangerous facts relating to general paralysis. It is a pity that these facts are not placed before all authorities who have in any way to care for the public health.

In connection with the prevention of insanity, I should like to offer some observations on the cause and prevalence of general paralysis. I hardly think that the Committee thoroughly grasp the seriousness of the following facts:

(a) During 1911, of the 1,632 male direct admissions to the London County Asylums, 264 suffered from general paralysis.

(b) During 1911, of the 603 males who died in the London County Asylums, 273 suffered from general paralysis.

(c) The yearly average during 1907-10 of the male admissions (first attack) throughout England and Wales was 7,089, of whom 1,172 were general paralytics.

(d) Of the total male admissions throughout the country, 1,264 were general paralytics, and that 1,092 of these were aged between 25 and 55, and 519 between 35 and 45, in other words "bread-winners."

(e) At Horton Asylum during 1912, out of the 182 males admitted (excluding imbeciles and transfers), 51 were general paralytics, of whom 43 were between 25 and 55 years of age, and 24 between 35 and 45.

Ever since Esquirol and Bayle, in the early part of the nineteenth century, first described general paralysis, its relationship to syphilis has been a subject of much discussion. As far back as 1857 a definite opinion, "no syphilis, no general paralysis," was expressed. All doubts have now to be put at rest by the discovery this year by Noguchi and Moore of the syphilitic organism in the brains of general paralytics. (*Vide* Dr. G. M. Robertson, *Journal of Mental Science*, April, 1913.)

It follows from this that *in this country, over twelve hundred men, in the prime of life, most of them strong, useful, vigorous, and unhampered by neuropathic heredity, or other unavoidable factors, fall victims to a rapidly fatal illness, general paralysis, due to a preventable cause, syphilis.* This does not include women, in whom general paralysis is less frequent, or those cases which die in hospitals and at home. It seems extraordinary that in England, where social and hygienic advancement is so vigorously advocated, no steps are taken to combat the spread of venereal disease. General paralysis is only one of the many disasters that may be the outcome.

*The Epileptic Colony.*—Dr. Collins notes:

*Treatment.*—A more extended trial has been given to salt-free diet. In Walnut Villa no salt has been used in the cooking at all, and a few selected cases



have been given sodium bromide for salt. Benefit was only obtained in three cases, but the effect of the change is now wearing off in all the cases. It is worthy of note that the total number of fits in this Villa from 1st February, 1912, to 31st January, 1913, was only 4,896, as compared with 6,187 for the previous year. There have been, however, several changes in the Villa patients, and the two patients who showed temporary improvement would account for a large part of the reduction, as both had large numbers of attacks—the treatment has not averted the onset of *status epilepticus* in these cases.

No other form of treatment has met with any measure of success, though 64, or 15 *per cent.*, had no fit during the year 1912 (17.5 *per cent.* males, 7 *per cent.* females). Left-handedness and epilepsy are said to go together, and I find that 22 male colonists out of 316 are left-handed.

Analysis of the hours of occurrence of fits shows that out of 44,000 fits, over 24,000, or 55 *per cent.* were nocturnal, and that the largest number in any hour occurred between 3 and 4 a.m.; in the daytime the hour 3 to 4 p.m. also shows the greatest number of fits. The least number occurred between 8 and 9 in the morning; only 878 fits occurred during this hour as compared with 3,241 between 3 and 4 a.m. The number is high from 9 p.m., when an increase is noted until 5 a.m., when there is again a considerable drop in the number. During the daytime the greatest number occurs during the hour preceding dinner rest, and again just before stopping work in the evening.

*The Pathological Laboratory.*—Dr. Mott's report is more than usually interesting on account of the masterly handling of the facts connected with insane heredity. He gave a full address on this subject to the London County Council.

The usual full reports of the incidence of tuberculosis, dysentery, and diarrhoea can be passed without further remark than they all show decrease, and thus prove the good results that come from scientific, thorough, and resolute handling.

The statistical work on heredity has been brought up to date. In all Dr. Mott deals with 3,845 cases, in which residence of a relative in one or other of the London county asylums is proved by the card system of record. Of these, 2,848 (1,424 pairs) were instances of two such residents in one family. In 160 cases there were three relatives in one family, in 27 four, in 6 five, in 2 six, and in 1 seven. In all, 1,620 families had more than one case of insanity recorded against it.

Dr. Mott has used his full records to attack again the question of antedating or anticipation, in order to show that "Nature is always endeavouring to end or mend a degenerate stock by the signal tendency to this occurring in successive generations."

Professor Karl Pearson, in *Nature*, of November, 1912, criticises on mathematical grounds the evidence of anticipation. Dr. Mott rejoins that he does not feel competent to reply to such an authority on mathematical biometry, but still relies on naked facts. We certainly are not competent to deal with the matter between two such authorities, but it is evident to us that Dr. Mott's figures are convincing. He shows that, while the age on admission of the total admissions is spread over decennia in fairly regular but unequal amounts, beginning with the larger number of ages under twenty-five, and gradually tapering off to seventy-five and upwards, those having heredity fall in much larger number (nearly twice as large) in the periods under thirty-five. There was only a percentage of 0.7 after sixty-five, and none after seventy-five. He adds the significant information that of 663 offspring of insane persons no less than one-seventh were imbeciles. Inter-sex ratios are slightly

against females, especially in the early involutional period, 35-44. An interesting question arises regarding the small quantity of aged people with inheritance. The ratios supplied by Dr. Mott would appear to confirm and justify the statement one often gives to relatives, that a senile failure of intellect is an accident, which does not reflect on the stock mental condition of a family. But is there a tendency in a family to suffer from such accidents—arterio-sclerosis, for instance? One wonders how many instances of insanity *occurring* in old age could be found to have resident relatives suffering in the same way.

The increased danger of dual inheritance (insanity, epilepsy, or nervous disease) over single is clearly shown by striking figures. Of the offspring of families having double inheritance, direct or collateral, 34.3 *per cent.*, reaching adult life, were affected; while, with single inheritance, that ratio falls to 6.7 *per cent.* An analysis of families having direct heredity gives a similar ratio of 22 *per cent.*, the families having only collateral heredity giving 3.6 *per cent.*

It is difficult to see how such statistics can be held subject to fallacy, but fallacy or no fallacy they are convincing. Of course these truths are not newly conceived. Everyone has had some opinion or feeling that insane or other inheritances favour attack both more frequently and at early ages, but now there is a truth that can be handled as a scientific fact, well equipped with unanswerable statistics.

Adverting to the general admission that "neuropathic taint" does not enter largely as a factor in general paralysis, Dr. Mott gives some tables which seem to bear this out. He finds that, comparing the incidence of the disease in all the resident patients with that in cases where there is relationship with other residents, the ratio of the latter is a good deal less than the former, while substituting death for residence and comparing the patients in the same method the ratio of incidence is exactly equal. In passing, we may say that in one or two instances these ratios need correction, but the errors, probably of transcribing, do not affect Dr. Mott's arguments. Dealing with the second of the two comparisons—that of deaths—Dr. Mott writes the following, which appears to us to be an excellent example of erudite and logical speculation:

#### *Syphilis and General Paralysis.*

I was asked in conjunction with Prof. Max Nonne, of Hamburg, to act as reporter at the International Medical Congress to be held in London in August on "The Nature of the Condition termed Parasyphilis." The two conditions of especial interest included under this term are *tabes dorsalis* (locomotor ataxy) and general paralysis of the insane. Recent researches have confirmed the opinion I expressed in the first volume of the *Archives* that these diseases own one essential cause, *vis.*, congenital or acquired syphilis. It was the collection of a number of cases of juvenile general paralysis in which congenital syphilis was the only ascertainable cause of the disease which led me to pronounce this definite opinion: no syphilis, no general paralysis. The close similarity in certain microscopic appearances of the brain in syphilis, general paralysis, and sleeping-sickness led me to the conclusion that a protozoal infection of the central nervous system was a cause. It was definitely proved as regards the existence of the trypanosome in the cerebro-spinal fluid in every case of sleeping-sickness, and it has been shown that when once the organism has invaded the central nervous system and has been found in the cerebro-spinal fluid, treatment by arsenic, mercury, and antimony is powerless to cure the disease. This finds an explanation in the fact which I have pointed

out in the Oliver-Sharpey lectures on the cerebro-spinal fluid. It is this: The choroid plexus secretes the cerebro-spinal fluid which functions as the lymph of the brain, and it does not permit these substances to pass into the fluid. If they were injected direct into the subarachnoid space containing the fluid it would probably kill the individual as well as the parasites. Now in the light of the discovery by Noguchi and Moore of the *Spirochæta pallida* in the brains of twelve out of seventy cases of general paralysis examined, we can understand why this disease resisted treatment by energetic administration of mercury in the past, and of salvarsan and other arsenical preparations in more recent times. It may be said that finding the parasite in twelve out of seventy cases does not prove that the remaining fifty-eight brains had undergone degenerative decay from the existence of the specific parasites. When I visited the Rockefeller Institute recently I had the opportunity of seeing Noguchi's preparations, and he informed me that he had now discovered the organism in forty out of 230 cases. French observers have discovered the parasites in seven successive cases of general paralysis which prior to death had suffered with seizures: they searched by smears, using the ultra-microscope or the Indian-ink method on the portions of brain which corresponded to areas excited and productive of the muscular spasms. We have employed these methods with success, and I have no doubt that in every case of general paralysis there are to be found foci of spirochætes if we were able to search long enough. One of the cases we have examined was a man of sixty who had not recently had seizures, but the Indian-ink method gave definite characteristic spirochætes in smears of the frontal lobe, as also did other cases, including a case of multiple gummata of the brain.

For some time past we have been impressed with the constancy with which the cerebro-spinal fluid of general paralytics gave a positive Wassermann reaction in all dilutions. Not only has this method enabled the authorities to diagnose this disease correctly in nearly 100 *per cent.* of the cases, but it throws a side-light upon the pathology of this disease. In syphilitic brain disease which is amenable to treatment with mercury and iodide of potassium, or the newer remedy introduced by Ehrlich, the spirochæte is the cause, but it may be supposed that it has not invaded the interstices of the brain-substance, but kept in the perivascular lymphatics, and is therefore capable of being attacked by the specific drugs employed. The Wassermann reaction in the blood and cerebro-spinal fluid is due to a complement-fixative generally regarded as a cell globulin arising in consequence of a reaction to the sensitising influence of a chemical substance produced by the living spirochæte. Now if the spirochæte is present in the interstices of the central nervous system in every case of general paralysis, foci of the parasites would produce a chemical sensitising substance which, escaping into the cerebro-spinal fluid, would produce a reaction most active in the immediate neighbourhood of the focus, but also a remote action on the central nervous system generally. To test this I have collected cerebro-spinal fluid withdrawn by lumbar puncture and fluid withdrawn from the lateral ventricles in thirty cases dying of general paralysis. The two fluids obtained from the thirty cases were subjected severally to twelve Wassermann tests in various dilutions, and the result was that fluids withdrawn by lumbar puncture, and which presumably had been longer in contact with the nervous tissue which provides the complement-fixative, gave a reaction from two to ten times more active than that withdrawn from the ventricles.

It might be asked, how do you account for the fact that not much more than half the cases of *tabes dorsalis* yield a positive reaction in the cerebro-spinal fluid? The disease is much more slowly progressive and is limited to the posterior spinal protoneurons. It is quite possible that the foci of the specific organisms which excite this degenerative process may be outside the spinal canal in the abdominal and thoracic aorta and other structures, and the sensitising chemical virus would escape into the lymphatics, which could, as experiment shows, only be carried up the posterior roots to the spinal cord; consequently, the degeneration is limited to these structures in this disease and the process is elective. Noguchi has found spirochætes in one case of *tabes*; it is possible that this is a case of *tabo-paralysis*. The only possible chance of curing this disease is to know what we are dealing with. We know that we are dealing with a living organism which has invaded the most important and vital structure in the body, and the problem is: How can we prevent it, and how can we cure it? Some important experimental researches are



being carried on at the Rockefeller Institute now, and apparently in tabes the results are promising. Essentially the treatment consists in intravenous injection of salvarsan, after some hours drawing off blood and using the serum to inject into the cavity of the cerebro-spinal fluid. Only about 2 or 3 *per cent.* of persons who have had syphilis subsequently develop general paralysis, and one problem requiring an answer is, What determines the disease in this 2 or 3 *per cent.* of infected persons?

The analysis of cases of general paralysis among relatives does not appear to show that the neuropathic inheritance plays a prominent part as it does in the true insanities. It does, however, seem to indicate that there is either (1) a special form of spirochæte, or a spirochæte which has been modified in its biological reactions by the wide-spread use of mercury in a community, whereby the organism resists the influence of this drug and remains latent in the system, possibly in a granule intracellular form; (2) that all those conditions of stress which lead to exhaustion of the nervous elements, such as in the general life of a highly cultivated and complex society bring about in uninfected individuals neurasthenia, predispose individuals infected with syphilis to a lighting-up of the disease by organisms which are latent in the central nervous system, awaiting to develop activity, as the pneumococcus and other organisms do when the vital activities of the tissues are lowered.

Leaving the factor of heredity, there is a most interesting account of the varying incidence of general paralysis in the parishes from which the London patients are drawn. We have repeatedly pointed to this particular interparochial variation in admission-rates as a source possibly of valuable information when properly investigated. Why should the Strand year after year head the parishes in proportionate contribution of insanity both as to admission and accumulation? This year again it contributes 13.9 per mille of the accumulation, while Lewisham supplies only 3.1. Dr. Mott has now seriously attacked this problem from this restricted point of view. He essayed to get full information as to the forms of insanity and nature of occupation of patients parish by parish, but he was defeated by the want of a universal practised classification among the superintendents. So he had to rely now on general paralysis. We may hope that he will continue some day his inquiry as regards the bearing of occupation, as there seems in that to be some hope of arriving at usable information, since there is but little scope for scientific disagreement in this relation.

The incidence of general paralysis when thus studied parochially is most striking. St. George's, W., heads the list in the males, with a ratio on admissions of 29.0 *per cent.* In the females it is only headed by St. George's, E. (5.9 *per cent.*), and Bermondsey (5.4), having itself 5.2 *per cent.* The two sexes combined have a ratio of 16.3 *per cent.* Bethnal Green, of all places, is the least affected, the ratios being males, 4.8; females, 1.9; total, 3.5. No doubt this question will be further worked up, and lead to some help being given to the study of ætiology when locally considered.

One more extract from the report which is, indeed, rich in interest:

The living nerve-cell has been examined by the ultra-microscope. It presents the picture of a viscid homogeneous colloidal spongio-plasm, containing an enormous number of minute oval or round granules, which appear highly refractile on the dark ground; the nucleus with nucleoli is seen in the centre of the cell, dark and less refractile. When the isotonic medium (cerebro-spinal fluid) is replaced by water an endosmosis takes place and the refractile granules escape; these remain discrete, and exhibit a Brownian movement, but do not coalesce. It is probable that



each granule consists of a colloidal fluid substance surrounded by a delicate membrane of (? lipoidal) substance. No Nissl granules are seen, nor fibrils, but when the cell dies the former appear and the nucleus stains deeply. Staining by Ehrlich's vital methylene-blue *in vitro*, shows that each of these refractile granules in the nerve-cell is surrounded by a membrane which has an affinity for oxygen. It is probable, therefore, that these granules represent an extensive surface of oxidation encompassed in the small space of the living cell.

The results described must be regarded as of a preliminary nature, for, on account of difficulties of technique, and failure with many methods that have been tried, successful results of staining have only quite recently been obtained, although the work has been in progress more than six months, and a large number of animals have been used. The animals were in most cases guinea-pigs, used for the Wassermann reactions.

*Statistics.*—We are saved the trouble of diving very deeply into the figures contained in the statistical tables themselves by the excellent memorandum drawn up by Mr. Keene. This annual effort cannot fail to be of signal service, its value increasing each year as the various points are elaborated.

The admissions are slightly in excess over those of the preceding year, but still below the average of the preceding five years. The female admissions are relatively fewer, and this fact, coupled with the higher recovery- and death-rates in that sex, leads to a distinct lessening of the female preponderance. From various facts Mr. Keene draws the conclusion that the increase in population is more due to accumulation than occurring insanity.

The combined deaths and recoveries when compared with the total on registers, show for the four years 1890-1893 a ratio of 21·26, as against one of 13·33 for the three years 1910-1912. The fall is regular in gradation, and, therefore, the more alarming. The proportion of first-attack cases among the total direct admissions appears to be fairly constant—roughly, about five-sevenths.

The average age of direct admissions seems to be gradually creeping up, there being a substantial decrease of cases below thirty in both sexes. This must be a subject for congratulation, however it is viewed, more especially if it can be found, in the light of Dr. Mott's figures given above, to have some direct relationship with anticipation.

A table of the last six years' occurrence of insanity in its prominent forms, among the direct admissions, shows that, with exceptions, these forms do not vary much in their occurrence, one year's decrease being balanced by increase in the next, but recent mania shows a constant tendency to decrease, the average of 15·09 in 1907 having given way to one of 12·26 last year, no year showing excess over its predecessor. The exact contrary is found in non-systematised delusional insanity, which has gone up from 5·79 to 10·18, again with no break in direction of progress.

Following on this table is another devised by Mr. Keene, compounded from the Association's Tables B 5, C 3, D 3, and E 2.

It exactly meets the point which for some years we have raised in these pages. The recoveries in particular forms of insanity are contrasted with the admissions under the same form, instead of, as formerly, with the total number of recoveries. Some little margin must be left for inaccuracy arising from change of form during residence.

But, as it stands, this table may be looked upon as giving sufficiently reliable information on the important point of the curability of particular forms, and to be therefore of immense and constantly increasing value. The table does not stop here. The basis, on which averages of happenings can be struck, is contained in three columns—one for those suffering from the diseases, as classified, who were on the register on January 1st, 1908; another, for the admissions from that date to December, 1912; and then a third column of the two previous columns added together, the combination showing the total under treatment for the individual diseases. Thereafter, the columns showing the recoveries during the last five years, the deaths during the same period, and the total residue at December, 1912. On these two sets of columns are founded the averages, these being the average recovery on the five-year admissions, the average recoveries on the total treated for the diseases as classified, and the deaths among the total treated. The arrangement is most ingenious in offering necessary information on several points, and it may well form the stock table for those who will, in large areas, do the great service to science of working out similar information.

Turning first to that disease which affords chances of either speedy recovery or speedy death—acute delirium—we find that the recoveries on the five-year admissions average 39·2 *per cent.*, while the deaths on the total treated for this fell disease average 24·4. On the same plan, general paralysis had a recovery ratio of 1·6, while the deaths were 77·4. Acute mania had 46·1 and 28·5 respectively, recent melancholia 44·3 and 22·3, the recurrent forms of the two diseases each supplying a higher rate of recovery, but a lower death-rate than their relative recent forms. Primary dementia had percentages of 16·4 recoveries and 15·3 deaths. Among the more purely psychical forms, in which death-rates can be discounted as being but little dependent on the mental condition, we find the following recovery rates, some of them surprising: alternating insanity, 26·7; delusional insanity (systematised), 11·2, (non-systematised), 22·2; volitional insanity (impulse), 32·6 (obsession), 43·2 (doubt), 25·0; moral insanity, 13·8. On looking at some of these figures it is impossible not to think that there is serious divergence of opinion as to what is the limitation of symptoms and signs denoting particular forms.

The parallel estimation of recoveries on the five years' admissions with those on total under treatment has an interest of its own, as showing the probabilities of late recovery. We hope next year to reproduce the full table as it stands.

As to *etiology*, some day we hope that some table will be designed on the same lines, but substituting cause for form of insanity. As Dr. Lord points out, Table C 4 is largely useless, since it only shows the ratio of recoveries with particular causation, when struck on total recoveries, and not on the subjects of that causation. Mr. Keene's method of treating Table C 3 is the only possible way of extracting information of any good from Table C 4. Acquired syphilis seems to be trending upwards, though with a broken course. The same may be said of alcohol and its heredity, in spite of the hopes afforded by preceding decrease. Puberty and adolescence as a cause also shows a substantial increase.

Among the more prominent features of death causation, tuberculosis would appear to be subsiding, being the cause last year in 10·94 of the total deaths. This is well below any of the figures of the last six years, though it did succeed the highest in the same period. The average for the six years is 12·73. It is hoped for and expected that the strenuous attention to treatment by open air and other methods now practised will lessen the rate in time. Occasional spurts of high figures must occur from time to time, but there is a decided tendency the right way. Valvular disease shows curious variations from year to year, for which it would seem difficult to offer any reasonable explanation, but in the related disease, arterio-sclerosis, it is not hard to suggest a reason for the marked rise year by year from 5·32 in 1907 to 11·96 of last year. It is a factor that has been diligently written up year by year, and which no doubt will be found in ever-increasing force. No doubt there are some cases which clinically can be referred specifically to this sole condition, but we think that, as a whole, it simply amounts to a substitution of an easy and comprehensive term for some other equally general conditions with more homely names. It is a condition as old as the hills, but not until recently promoted to be a recognised entity worthy to be assigned as a primary cause of death. Why, then, has it not been so recognised? That there is a good deal in fashion, even in medicine, is the suggestion which is raised by a study of its relative incidence in the contributing asylums. It is also worth noting that it does not appear, either as an entity, or among the other pathological appearances found and set out by Dr. Mott at Claybury.

In the *Engineer's Report* Mr. Clifford-Smith gives the subjoined short account of the new eleventh asylum, which will be of interest.

The design of the asylum differs to a considerable extent from that of the other large institutions on the estate, although of necessity it must follow in some degree the general arrangement common to all. It has several special features, the chief perhaps being that all the buildings for the patients are to be detached. Sixteen of the blocks for patients are connected with the administrative departments and each other by open-sided covered ways, and these form the main asylum and are of two floors in height. The blocks outside the main asylum, with the exception of the admission hospital for recent and acute cases, and the convalescent homes, are of ground floor height only. The admission hospitals provide for fifty-four of each sex, and the villas for convalescing patients for thirty of each sex. In addition to the usual hospital for infectious cases there are to be two 30-bed buildings for the treatment of patients of each sex suffering from phthisis. The phthisis hospitals and the infectious hospital are arranged on the north of the main building and will form a section devoted wholly to the treatment of contagious diseases. In the construction of the buildings reinforced concrete will be used for all upper floors, and these floors will be faced with thick linoleum in place of the usual wooden flooring. Steel is also to be largely used in the construction of the main stores, bakery, laundry, recreation hall, and other large structures, while the coal bunkers and rain-water tank are to be wholly in reinforced concrete.

The asylum will accommodate 2,066 patients in the proportion of 968 females and 1,098 males, with a provision of 30 additional beds for male patients. The latter will become available as the single attendants marry and live out. Six medical officers, a matron and assistant matron, nine female sub-officers, 143 nurses and female servants, four male sub-officers and 109 attendants are also provided for in the buildings. There will also be a residence for the medical superintendent, and houses for the inspector, the foreman engineer, and the fireman.



*London: Metropolitan Asylums Board Asylums.*—The Board has taken example by the County Council in beginning its report with a statement of its duties. This it combines with some account of the growth of its varied powers and responsibilities. Its origin, of course, came from a desire to save expense by co-operation between the various parishes which constitute and are coterminous with municipal London. The Board consists of members elected by the guardians of the parishes, who are joined by managers appointed by the Local Government Board to the number of one-quarter of the whole body. Its energies have been directed to the "reception and relief of the sick, insane, or infirm or other classes of the poor." Among these have been the mentally defective, who would otherwise have been dealt with by each parish. Such mentally defectives have been confined to those who could be dealt with under the Poor Law, those who had to be dealt with under the Lunacy Law coming under the responsibilities of the County. This was the position at the time of the passing of the Mental Deficiency Act, and it is strictly preserved by the terms of the Act. Thus, hopes entertained elsewhere of having one central local authority for all shades of mental illness have been disappointed. Any change in such a direction would have gone to the root of the Poor-law, involving it in an alteration that would have demanded the most complicated legislation, affording at all stages opportunities for resistance, active and passive. In the case of the Board, it would have been rightly argued that it had already led the way in the treatment and training of juvenile deficiency, while with regard to adults it had provided quite satisfactory institutions. But, all said and done, there is much need for the most friendly co-operation between it and the County. The Education Acts will inevitably provide a point of contact where any failure of co-operation must lead to friction and consequent increase of expense. The border-line between "imbeciles" and "feeble-minded" is vague indeed in practice. In this relation, the withdrawal of senile demented from the scope of the Act is an unmixed blessing. The Board, rightly, in our opinion, claim that those who benefit by its ministrations are not "tainted with pauperism" any more than the inhabitants of county pauper asylums. In the case of fever patients there is special provision to the contrary, while the Mental Deficiency Act provides that disfranchisement shall not result from any form of treatment under the Act. It still remains a blot on the Lunacy Acts that a man, whose wife or child is taken from him by the most expensive disease that can fall on a household, shall go voteless.

The great change, by which Darenth is transformed simply and solely into an industrial colony, is reported to work successfully. The further arrangement by which the care of juvenile defectives passed from the responsibility of the Children's Committee to that of the Asylum Committee appears also to work well and successfully. Incidentally, it may be remarked that the Bridge Industrial Home is the only one left of the several houses of one sort or another which used to receive these unfortunate children. It has become an appanage of Darenth, the same sub-committee managing both, while the medical superintendent of Darenth decides whether applicants for industrial training shall go to one or the other. In time, one would think, the fact of



there being the two places will be of great service in affording means of differentiation in *régime*. Darenth still maintains its name for turning an honest penny by honest labour. It has, as is generally known, suffered the great loss of Dr. Rotherham, to whose genius must be attributed its wonderful progress. He has set the machinery to work, and we can look with confidence to a continuance of its excellent work under any successor. Dr. Rotherham's experience and success in a branch of psychiatry which he has made peculiarly his own, must make him a very welcome addition to the Central Board of Control. A new industry has been introduced at the Bridge Home—that of fruit and vegetable bottling. The results compare favourably with articles obtained at any of the large stores, at an insignificant cost, of course. It is to be largely developed.

The statistics are kept up with the closest adherence to the tables of the Association, and there is much room for congratulation on this head. The benefit of this care may not be apparent at first sight, but it has to be remembered that a true conspectus of the total alienation in London cannot be got solely from the London county asylums for any comparative purposes. That conspectus can only be obtained by adding the statistics of the Metropolitan Asylums Board's institutions to those of the London County Council. We look forward to a scientific and beneficial study of the statistical returns of such a large and definable area as London. Such cannot long be deferred in view of Dr. Mott's beginnings, and one can easily get into error unless all its true components are brought into reckoning. A striking example of this is afforded by the table (B 5) of direct admissions (excluding congenital cases), in which senile dementia is returned as the form of insanity. In the county asylums this was assigned in 5.0 *per cent.* of the direct admissions, while the senile dementia admissions to the Board's institutions was no less than 67.7 *per cent.* The two combined showed a percentage of 13.2. The Commissioners show a percentage average for England during the five years, 1907-1911, of 5.9. The disparity between all England and London in this relation no doubt arises from the fact that the lunatics in workhouses and living with their friends or others form a percentage of total lunatics in England (excluding London) of more than 18, while in London itself the same is less than 2. It is among these workhouse cases that one looks for the greater amount of senile dementia, and in London the workhouse is replaced almost exclusively by the Board's institutions. This is only one point of possible error, but the danger runs through the whole of the points of inquiry.

*Northumberland County.*—Dr. McDowall laments that the accommodation for the sick and infirm, which was agreed upon, has been held up in view of the Mental Deficiency legislation. The facts we have mentioned when dealing with the Kent reports prove that so much time has been wasted. Some new cottages built for married attendants, with suitable arrangements of service, allow of the men taking every meal at home. Doubtless this must increase their comfort and lessen their expense, seeing that the Committee allow each man £26 *per annum* in lieu of rations, with £2 for laundry.

In reference to the Guildhall Conference, Dr. McDowall tells his Committee some straight things :

Some earnest men have long laboured to induce county councils and asylum committees to take up the consideration of at least parts of these great subjects, but with most disappointing results on the whole. When one considers the amount of human suffering and the enormous expenditure of money represented by the 135,661 insane persons in England and Wales, it is passing strange that not until now has a really serious effort been made to excite interest in a national danger and to alleviate suffering by increased scientific research. Here and there an earnest man has tried to stimulate the interest of his committee in the medical and scientific aspect of mental diseases, and in diffusing knowledge as to the care and treatment of the insane, but with a few cheering exceptions the response was seldom encouraging; generally it was the reverse, even to hostility. As was made abundantly evident at the Conference, many medical men are highly dissatisfied with medical affairs as they now exist in asylums, and it was explained how successful efforts have been made to increase the facilities at universities for the instruction of medical officers, and thus to enable them to attack by scientific inquiry the numerous problems which come under their daily notice. These facilities for acquiring scientific knowledge are being taken advantage of, and it now rests with asylum committees to offer encouragement to men who are attempting to do something to place the treatment of mental diseases on a scientific basis, and thus to save the people from a danger threatening the public well-being. With a central laboratory employing thoroughly capable men, much would be done to advance knowledge, and medical officers in provincial asylums would be able to conduct lines of inquiry, which in due time would, it is hoped, rival the recent achievements in other branches of medicine and surgery.

*Stafford County, Stafford.*—The Committee has favoured the idea of the first A.M.O. being a married man if he elects so to be. It has obtained and approved of plans and estimates for a suitable house near the main building. Dr. Christie has found the appointment of an outside stocktaker to be an unqualified success. It brings welcome relief to those who are responsible for the safe and accurate keeping of stores.

*Stafford County, Burntwood.*—Dr. Spence refers again to the overcrowding of his children's wards on both sides. He has so often complained of this that he is not surprised that the coming of the Mental Deficiency Act is made a reason for further delay. We must confess, however, to feeling that in this instance there may be some excuse for caution, since there must surely be some of the children who would be as capable of training in a proper institution as are the children at Darenth. But this does not excuse the county authority, whether acting by its asylum committee, or by its mental deficiency committee, from taking immediate action to remedy an undoubted wrong. A nurses' home, and cottages for married men have been planned, estimated for, and approved by the County Council, but hung up for the time. Additional benefits have been granted to the staff, for which gratitude is felt. As Dr. Spence says, such things cost money, but the cost of those asylums which "have grasped the nettle" must not be compared invidiously with that of others who have not so far fallen into line.

*Stafford County, Cheddleton.*—Three women died of appendicitis—an unusual number in asylum practice. One case of enteric occurred. During convalescence an ovarian abscess supervened and proved fatal.

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From it a pure cultivation of *B. typhosus* was made. Dr. Menzies has found a Scylla and Charybdis. Old dysentery cases have to be kept warm, and this seems to have a deterrent effect upon relapses in those who have never actually got rid of Flexner infection. But a good number who had both tuberculosis and chronic dysentery suffered a recrudescence of the former on being deprived of open-air treatment, and some died. He writes about nurses:

Very great difficulty has been experienced during the whole year in finding suitable nurses, and it is a complete mystery to me why mental training is not more popular; the food is far better than in the vast majority of general hospitals, the hours are not longer, a small salary is given instead of a premium being demanded, and the work is far easier and less trying, as well as being more interesting, while the training is so much more thorough than even in the best hospitals that the nurse has ready at hand a profession which for the rest of her life will bring in from two and a half to three and a half guineas per week. Yet we do not secure the pick of those who enter the nursing profession, and the large majority of those who come here leave or are rejected within the first month. The only moral to be gathered is that no efforts should be spared to keep up a high standard of diet and home comfort, and to lower the hours to seventy per week as soon as possible.

All this is undoubtedly true in every particular, from *our* point of view, but unfortunately ignorance and prejudice reign supreme in the classes from which we might look for good nurses, indeed in some classes that should know better. While these exist there will always be a difficulty in attracting the right people. We will venture to add to the moral drawn above, the suggestion that it is the duty of all of us, collectively and individually, to use our best endeavours to abolish the invidious and unmerited differentiation between the general and the asylum nurses.

Looking at the county as a whole, one is struck by one or two matters. There appears to be an inordinate amount of epilepsy in Staffordshire. Comparing the total population of the three asylums on December 31st with the total number of epileptics at that date, we find a ratio of 16·1 as against the ratio, for all county and borough asylums, of 12·7. No other county reaches this proportion, though one asylum, in the group of counties having more than one asylum, approaches it. Among the boroughs it is topped by Newport, West Ham, and York. In view of the close connection between epilepsy and insanity, it would appear that this excess in certain areas would repay special investigation. Tuberculosis lays a heavy hand on all three asylums, in two out of the three the tuberculosis death-rate on residence at the end of the year being double that of the average ratio of the asylums compared. The Stafford asylum heads the list of all England. This fact would not seem to be necessarily due to the advanced age of the structure, as has been at times alleged, for Cheddleton, one of the more recently built institutions, presses the former very hard, and Burntwood, of middle age, is not far behind. It would, therefore, seem that Stafford has an undue tendency to tuberculosis; whether that tendency has any ætiological relation to insanity or not would also be a subject for interesting inquiry. We have often before adverted to the remarkable combination of various trades, callings and occupations to be found in this county—agriculture, ironwork, mining, pottery, railways, engineering, and so forth.

These all afford some means of comparison as to the relative connection with mental disease, and altogether we think that this county would be a happy hunting-ground for an enthusiastic inquirer. The broad facts are that the county, as represented by the admissions into the asylums, has less male and more female heredity of insanity, less female but more male syphilitic disease, more male alcoholism and less female, all in comparison with the general averages of England and Wales. In no particular does Stafford depart very far from those averages.

*Some Registered Hospitals.*

*Barnwood.*—Dr. Soutar records a case of recovery in a lady who had been subject to maniacal excitement, fixed delusions, and faulty habits, after six years' treatment. He contrasts that with another case of melancholia, who had the same good fortune after even a longer period of treatment. He frankly confesses that he does not know why the former got well, but in the latter he always had hopes, as, to his knowledge, toxæmia played a large part in her illness, and there was the chance of correcting faulty metabolism. A definite line of treatment, varied in detail from time to time, and continued for a long time, overcame the fault.

We know so little of the origin and of the nature of those autogenic poisons that, in the treatment of many of our cases, much valuable time is undoubtedly lost. Sometimes we grope to success through a series of futile efforts—making attacks, more or less at haphazard, first on one and then on another possible source of poison production. Sometimes our line of action is clear, as in the case of a lady who quickly recovered last year after an offensive discharge from her gums (pyorrhœa alveolaris) had been cured, but clinicians will know how to treat many of these cases with efficiency and celerity only when skilled investigators have given us the results of extensive and difficult research into the causation of mental disorders—a work which is sadly hampered in this country by inadequate financial support.

*Bethlem.*—The following extract from Dr. Stoddart's report is important:

A close investigation of the ætiological factors of the insanities has induced me to agree with Prof. Freud of Vienna in his dictum that sexual "complexes" and "conflicts" play an enormous rôle in the causation of the constitutional psychoses which form the bulk of the cases we have to treat at Bethlem, although I was inclined, when this eminent physician's papers first appeared, to be somewhat sceptical and to ascribe his discoveries to differences between continental temperaments and our own. At the same time we have to realise that the aforesaid "complexes" and "conflicts" are effective only in patients who have a neuropathic constitution, usually due to neuropathic heredity.

Another extract conveys in a characteristically modest manner news which ought to have been of wide world interest. It has, however, hitherto escaped that attention which it undoubtedly deserves. We offer Dr. Stoddart our cordial congratulations.

It is gratifying to note that three cases of undoubted general paralysis made a satisfactory recovery. One of these, who was discharged in January, 1912, I have just seen and examined again, and find that his health remains excellent and that he is managing a large engineering firm in a capable manner.

We feel sure that such a learned and conscientious thinker having safeguarded his diagnosis of general paralysis with absolutely satisfac-



tory Wassermann and such-like tests, has in some sure manner excluded the possibility of the symptoms being in remission before he made his very definite statement. Up to now it had been thought impossible to secure the admission of antibodies to the areas in the brain which are unquestionably affected in this disease, there being apparently both physiological and anatomical difficulties in the way which seemed insurmountable. There will, no doubt, be a wide-spread desire to know how this has been effected. There have been signs and symptoms in the air for some time of the advent of a cure for general paralysis and a distinct feeling of hopefulness in the minds of more than one distinguished worker in this important field. But, of course, it may be that Dr. Stoddart means only a satisfactory recovery *according to law*, the necessity for detention having receded.

In the same paragraph Dr. Stoddart also reports the complete recovery of five cases of dementia præcox, "which is usually regarded as an incurable disease." Our soul again is troubled over this importation from foreign parts. We have dealt in Dr. Lord's report with the curability or incurability of dementia, and now wish to deal with the condition denoted by the compound term. If it is to be deemed to be incurable there must be a far greater difference between dementia præcox and adolescent insanity than was contemplated during the memorable debate a year or two ago. Sir Thomas Clouston proved that his cases of adolescent insanity were eminently curable, especially in the exalted form. Kraepelin holds that the possibility of recovery "answering to the strict demands of science is very doubtful, if not impossible to decide. But improvements are not as unusual, which in practice may be considered equivalent of cures." We are still labouring under the great disadvantage of not having any pigeon-hole in our classification into which cases can be placed. In consequence we speak with two tongues about this "symptom-complex." We note that Dr. Soutar speaks in an equally hopeless tone of the incurability of the disease, which, we fear, can never be adequately delimited as it should be before it can be deemed fit to foretell the future by its name alone.

*Bootham Park.*—Graceful remarks about the retirement of Dr. Hitchcock, after many years of work here, are made by the Committee and by his successor, Dr. Jeffreys. Dr. Hitchcock attended fairly constantly at the Association's meetings, and took much interest in the work of the Parliamentary Committee on behalf of Registered Hospitals. It was during his reign that the old hospital in York, which had a not very satisfactory history in ancient times, was closed, the present efficient institution taking its place.

We note that a case of mania, æt. 91, recovered after four months' treatment.

*The Retreat, York.*—Dr. Bedford Pierce records a bequest of £1,500 from a former lady patient for the poorest patients, to accord them additional and longer changes of air and visits to the seaside or elsewhere. The lady had felt herself the benefit of these changes so much that her thought was to promote the happiness of others who could not otherwise enjoy the trips. In dealing with this and other similar

bequests and donations, Dr. Pierce points out that if it were not for this kind of aid the finances of the institution might be threatened, in face of the ever-growing expense of maintenance. He relates that one lady was admitted at the age of 90, which he thinks to be a record; but he is beaten by the sister institution, as shown above. He has also a lady, æt. 94, who can be seen any day walking about the grounds unattended, and yet two others over 90, one being 95. Taken altogether, the hospitals in York seem to be healthy enough. Dr. Pierce is insistent on the benefits arising from giving patients, whose progress is arrested, a change to another institution. Wonders undoubtedly do occur from fresh environment. It would seem that it would be quite easy to try the experiment in his own county asylums, transfer between which would not entail the official trouble that would arise between county and county. He would much wish to see the provisions for the treatment of incipient insanity being carried out, and he would extend them especially to the poorer classes, who can never afford to have their sick relatives treated, except as *certified* inmates. The idea of such treatment was pressed hard on and accepted by the then Lord Chancellor (Lord Halsbury) at the instance of the Association. No doubt it will form an important plank in the Association's platform when lunacy legislation is about.

*The Warneford, Oxford.*—In dealing with heredity Dr. Neil rightly says that the truth, which is often concealed, is also often revealed in the temperament of the relatives when they visit the institution, and recalls a remark of Dr. Maudsley's that the insanity of the child is the pathological evolution of the parent's nature.

The following note may be useful in those cases, which sometimes trouble one, where there is any doubt as to the nature of an attendant's "employment," when associated with the recreation of patients and staff:

In the month of August an attendant suffered fracture of the patella while taking part in a competition of athletic sports which had been got up for the joint amusement of the patients and staff. It was considered that he was in the discharge of his duty, as an attendant, when the accident took place. He was seen by the consulting surgeon, and removed to the Radcliffe Infirmary for treatment. He returned to duty after a period of total disablement of three months. During his absence he was paid his full wages, and the asylum received from the insurance company the compensation to which he was entitled under the Workmen's Compensation Act, the amount of the compensation being less than his wages.

#### *Some Scottish District Asylums.*

*Aberdeen, Kingseat.*—This asylum, opened less than ten years ago, is crying out for enlargement. It had, however, been foreseen that such would occur when the asylum was built. As Dr. Alexander points out, the type of institution makes it somewhat difficult to say how enlargement can be best carried out, there being all the questions incident to classification to consider. The hospital section particularly is needing enlargement, and a new closed villa for males is wanted. We note that fifty cases are boarded out, this system having staved off, without doubt, the need for increase in accommodation.

The following is an important contribution to psychiatric science, and should the accuracy of the test be established, much credit will rest with the inquirers mentioned :

Drs. Tyson and Pierce Clark analysed the ocular signs and symptoms in 115 consecutive cases of primary dementia, and found that certain distinctive signs and changes were present as a syndrome in all cases of this disease, and occurred in no other. If their results are confirmed by others, the differential diagnosis of this disease from manic-depressive insanity—at present a by no means easy matter—should be simplified.

*Ayr District.*—Dr. McRae remarks on a much decreased male admission-rate. In default of other explanation he can only suggest that this may be due to extraordinary diminution in the vagrant class. He notes also that cases of insanity associated with the adolescent period of life show a 52 *per cent.* reduction in the last seven years. He says that, as the bulk of chronic and incurable cases which accumulate in asylums is derived from this class, the fact is not without hopeful significance. Alcoholic excess was also found in two-fifths of the admissions, a reduction on the previous year. Commenting on the enormous increase—300 *per cent.*—of cases in which suicidal attempts had been made, he writes :

If so-called education tends to inculcate a spirit of agnosticism and a capacity for acquiring an intimate knowledge of morbid morality from the daily press, man is bereft of everything but the mere animal instinct of love of life to support him in his hour of mental anguish and despair—an instinct not even as healthily developed as that of the lowest animal in its natural and independent state. The blood-curdling, revolting, and entirely unnecessary details of an act of violence in the most remote corner of any hemisphere are, in a few hours, the common property of all in the civilised world who read. If letter-press fails to appal the imagination sufficiently, this is supplemented by pictorial illustrations, often from actual photographs. It is inconceivable that this kind of thing can have any but the most harmful influence on immature and developing minds, and more particularly those over-sensitive and susceptible to morbid suggestion. When stress comes, as come it must, such minds, deficient in self-control and the victims of morbid suggestion, give way to morbid impulse, and so commit deeds of violence, with the direst consequence to themselves and others. Civilisation would seem to be developing a paradoxical state of affairs in which the keener the struggle for existence the feebler becomes the instinct of self-preservation !

*Glasgow, Gartloch.*—Dr. Parker continues to show by a useful table the proportions of admissions in broad age-groups. Those under thirty show a steady tendency to decrease, while those above sixty show the opposite tendency. This is satisfactory, for though the senile cases may give much more trouble, yet they count for little in the estimation of fresh insanity, which the occurrence of fewer juveniles affects in a satisfactory direction. Dr. Ronald Stewart contributes important news when he states that he has found by testing almost all the admissions with Wassermann's reaction that 66 out of 213 react positively. All the 27 general paralytics responded, 25 *per cent.* of the manic-depressives, about one-fifth of dementia præcox, nearly one-third of chronic delusional insanity, more than one-half of the organic dementia, and about one-fifth of confusional cases likewise answered the test positively. The positive reactions occurred in 40 males and 26 females. We note that syphilis heads the probable causes with 34 in number, 4 of whom were females.

*Glasgow, Gartnavel.*—Dr. Oswald refers to a considerable increase of female admissions over those of the males. This is a departure from history, for until ten years ago the preponderance was much in the opposite direction. Even including the results of the last ten years, the admissions from 1814 to the present time show a large excess of male admissions—9,724 against 8,452. He offers no explanation:

I do not advance any explanation of this, but, drawing our patients as we do from the middle classes, it is interesting, as possibly pointing to some stress to which women—many of whom earn their living at the same occupations as men—are now exposed, and which leads to a nervous or mental breakdown.

We find the same change at Barnwood, though the figures are not so large. It is possible, of course, that the presence or absence of vacancies at the time of application must have some effect, but anyhow there must be some undiscovered reason for the change. Unfortunately the question cannot be studied in the English registered hospitals or licensed houses as given in the Blue-book, since idiot establishments are included therewith in the totals. Referring to the prevention of insanity before it develops, Dr. Oswald writes:

During the past quarter of a century the most marked advances in medical science have been in the direction of the prevention of disease, and the problem of the prevention of insanity is probably not essentially different from that of the prevention of other diseases. A department of mental hygiene, having for its objects the after-care of discharged patients, the nature of the conditions—social, economic, and otherwise—in which insanity develops, and which would also educate the public as to the nature of mental diseases, the recognition of their early symptoms, and their prevention, would, in the charge of skilled workers, yield valuable information. Such a department might with advantage be affiliated with the Public Health administration of a large city.

*Roxburgh District Asylum.*—Dr. Johnstone, following his frequent practice of late years, devotes a considerable part of his own report to the current lunacy legislation. We know no place where a more careful and thoughtful survey of this legislation can be found. Indeed, what with Lord Wolmer and Sir J. Jardine with their Superannuation endeavours, with Mr. Lloyd George and his Insurance, and Mr. McKenna with his Mental Deficiency, there has been and is a surfeit. Dr. Johnstone inveighs against the shelving of the old District Boards of Lunacy:

Many persons and many circumstances have assisted in bringing about the betterment; but it is very largely due to the humane and enlightened policy, the unselfish labours, and the practical common-sense of the county and burgh members who compose the district boards of lunacy, that the treatment of the insane in our district asylums has been raised to a standard of excellence unsurpassed in the institutions of any other country. No explanation or reason has as yet been vouchsafed for the extraordinary changes proposed by the authors of this Bill; but their enactment would appear to involve the reversal of the policy approved by two generations, the relegation of lunacy administration to the domain of the Poor Law, the conversion of our asylums into poor-houses, and the branding of every poor subject of mental disorder as "in all respects" "a pauper."

*Stirling District Asylum.*—Dr. Campbell gives a useful table showing the forms of insanity on admission of the 29 cases in which suicide had been actually attempted. Of course the great bulk were melancholic,



but there were three with acute and two with chronic mania, four with confusional insanity, one paralytic, and one congenital deficient. The sexes were divided as seventeen males and twelve females. These figures serve as a useful warning not to look for suicide only in melancholics. As to the means whereby the attempts were made: cut throat, 2 males, 2 females; drowning, 7 and 5; hanging, 1 and 0; mutilation, 1 and 0; poison, 0 and 3; precipitation, 2 and 1; stabbing, 1 and 0; and 1 of each sex by strangulation. Among the 54 cases in which the suicide was only meditated, we find no less than 8 general paralytics, and the same number of confusional insanity. Both these latter are alarmingly suggestive, in the one case because that amount of desire to die and of determination to die is not usual, and in the latter because apparently the state of mentalisation would be against the forming of such desperate plans. But, after all, one wonders what is included under "confusion." We note that, though 17 cases of primary dementia were admitted, not one of these, or of the previous admissions of the same kind, recovered.

*Some Scottish Royal Asylums.*

*Edinburgh, Morningside.*—Dr. Robertson's own interesting address forms the only part of this report that has reached us. It may be called an address, as it is read each year by the Superintendent in public at the Annual Meeting of the Governors. It gives him an opportunity of contributing to public knowledge from his own stores of science and experience in matters psychiatric, and has undoubtedly been in past years the means of instructing and advising the public in facts and deductions which would have otherwise been more or less latent. This year Dr. Robertson has touched upon a subject that needs more close attention from our psychiatric point of view than almost any other. We refer to militant suffragettism. Dr. Robertson introduces the subject by the statement that in consequence of the rubbish which has been uttered in the press about forcible feeding, his own practice and that of others has been sadly troubled. Parents and friends raise objections on the ground of the alleged cruelty, and some would go so far as to let the patient perish for want of this feeding. Of course such a wicked decision might affect patients at home or under the direct care of the next of kin, but in the asylum it could not prevail. In either case the direct responsibility of a medical man may be unexpectedly questioned in a court of law, in view of feeling existing in a portion of the public. We apprehend, however, that in the case of a certified person, at all events, there can be no doubt as to the right and the duty to adopt any course of treatment, generally accepted, that may be thought necessary to the discharge of the responsibility cast on the medical man to whose care the law has committed that person. Dr. Robertson advances an opinion as to the cause of the bodily failure of suffragettes under forcible feeding in comparison with the insane when subjected to the same pressure.

During 1912, more than a fourth (66 out of 240) of the suffrage prisoners in England were liberated for reasons of ill-health, which, with few exceptions, was due, wholly or in part, to their refusal to take food. I concluded at one time that

the process of artificial feeding must have been resorted to in these cases much too late, when the strength had already failed from want of nourishment, for I find this is the mistake the inexperienced most commonly fall into in treating the insane, and I warn my students of this danger. We are all more inclined to defer feeding too long than to begin too soon, but it is safer to err the other way. I now understand that what differentiates "the hunger-striker" from the insane person who refuses food, and is an important factor in the injury to health she occasionally sustains, is the purposeful and violent way she resists and struggles until utterly exhausted. After she is fed she voluntarily ejects the meal. The patient, on the other hand, is frequently confused and even apathetic, and may be a mere passive resister, or else is intelligent enough to realise that whatever he may do, he will be fed in the end. He is also aware that no unnecessary inconvenience or indignity will be offered to him in the process to which he quickly becomes accustomed. It is probably not so much the feeding as the struggling that injures "the hunger-striker," and if she struggled to the same extent on an empty stomach in having her face washed, or her clothes put on, the consequences might be similar.

All this, no doubt, is quite true as far as it goes, but it cannot be considered to exhaust the subject. Have we not in our asylums women who are as fractious and resistive as any suffragette can be? Is not the voice of God or the Devil quite as compelling as any idea that can find entrance into the suffragette brain? Of course, no question of the skill and experience used in the prison can be raised, for we know that the treatment is in the hands of thoroughly efficient officers. Speaking from memory of the figures given by the Home Secretary in an interesting statement in the House, the results were more satisfactory than given above. If we remember aright, he said that at the time, which would be closely near the time of Dr. Robertson's report, there were over 100—we think about 140—women being fed forcibly, and of these only eight had been discharged in consequence of danger to health. Of these eight, four had cardiac disease, and the remainder had other physical affections of a threatening nature. The fact remains that the great majority were being fed safely and effectively, the others being exceptional cases. We, too, know that in asylums exceptional patients do die even after effective feeding, failing possibly, nay probably, from the great desire to die, and the consequent want of that natural determination to live which helps the human being to exist in circumstances of great trial. The insane often start with this determination towards death, whereas death is the last thing desired by the suffrage prisoners who only wish to defeat the law.

#### *Some Irish District Asylums.*

*Belfast.*—Dr. Graham gives his authorities a large quantity of sound advice concerning the chief causes or factors in the production of mental disease. In relation to the lessening of the opportunities for handing down the taint, he writes:

And in regard to the prevention method, perhaps the greatest legislative effort ever made to apply it in a large scale is that of the Mental Deficiency Bill. By its means a standing menace to the welfare of the social body will be destroyed; the hitherto unchecked liberty allowed the feeble-minded to propagate their kind and hand down their malady to unborn generations will be no longer permitted, and posterity will be the gainers. Unhappily, this beneficent measure is not applicable to Ireland, though if ever there was a country in need of it, it is our own. In Great Britain private philanthropy can endow, and has endowed, homes

for the feeble-minded, but owing to the poverty of the Irish people there is greater need of State aid here than in England or Scotland. It is most unfortunate that a class which cries so pitifully to us for help, and which unwittingly takes such a terrible revenge for our neglect, is left by Parliament exactly where it was. Much good is also to be anticipated from the spread of the eugenic movement, which aims at the awakening of the public conscience to a sense of race responsibility, so that marriage, the symbol of all that is divinest in human life, will be no longer the channel along which may run the chartered curses of the world. But the champions of eugenics will do well to depend more upon the slow but irresistible power of an educational propaganda than upon the doubtful expedient of coercive legislation. It is their task to inform the public mind to drive home such a single truth, for example, as has been verified by many a sinister historical illustration, that the confluence of the tainted streams can have but one outcome—a stream more tainted still. And when the reason and conscience of the community have been convinced, the laws which regulate conduct will be conformed to the conviction.

We venture to add that if history can show the evils of combining the sources of degeneracy, so can it show the benefits of mingling the tainted stream with one that is free from taint, or perhaps we should say with a stream that is comparatively free, for how many families can sneer at their neighbours in this respect? We think that while we, as a profession, may say with authority that double heredity is an unmitigated evil, it is our duty to point out that the evil of a single heredity can be, and often is, remedied by a mixture with good sound blood. We are too apt to look on the black side of the question, but whatever may be our ideas on the subject, Nature goes her own way, and often picks up the race by this process. History can show plentiful instances of degenerate monarchs being links in the production of the most competent rulers, happy mating, good environment and careful training, serving to arrest and reverse the downward tendency.

*Down District.*—Dr. Nolan contributes in his report some apt remarks on the changes in type of the forms of insanity admitted into asylums :

Table IX sets forth the forms of insanity under which the cases admitted during the year laboured. It shows the variation in type so pronounced in recent years. New types are gradually becoming more and more defined, the development of which to a large extent is responsible for the great changes in the internal constitutions of the modern lunatic asylums. This alteration in the general character of current mental disease, as contrasted with the *facies* it presented some generations ago, is very remarkable. It is naturally but little known, and less appreciated by the general public, each case of lunacy being but a dark and hidden episode in the family circle. But the change is very obvious and interesting to those who have the continual care of masses of the insane, and in making provision for the care of the mentally affected, it is essential that the community at large should have some idea of the transition that has taken place in the type of insanity. The combination so common in old days of wild, unreasoning mania, associated with extreme physical violence, is now the exception, the vast majority of cases showing different degrees of mental weakness associated with bodily debility. Hence the demand to-day in asylums is not for iron bars, strait-jackets, and walled exercise yards, but for hospital wards, comfortable surroundings, and comparative freedom out and indoors. The attendants are called on to combat the disease and its dangers, not by acting as "brute force" adjuncts to mechanical restraint, but by exercising careful nursing for the broken-down health, and a guiding intelligence capable of circumventing the suspicion, depression, and active suicidal tendency, which combine to give the leading features to the delusional insanity so prevalent to-day. The district asylums get an undue share of such cases, inasmuch as the social condition from which the admissions are drawn is of the poor and humble

class. Money goes far to ward off certification. In more affluent social circles thousands of similarly affected persons are at large, suffering from "nerves" and "neurasthenia," and now and again one or other shocks society by a tragic deed of murder and self-destruction or other terrible outrage; but the vast number continue to resort to the health resorts of Europe, where they lead comparatively harmless, if unhappy lives. The poorer victims, quickly colliding against the legal limits of sane action, are speedily relegated to the asylums.

Of course it is open to be argued that a wider area of mental disorders has been classified as insane of late years. Many are sent now who would have been left in workhouses or at large, and these serve not only to dilute the fiercer character of the acute cases, but also to produce lower ratios of the acuter forms. Further, the character of modern treatment serves to abort, so to speak, much of the acuter diseases. Notwithstanding Dr. Nolan's remarks, we find from his figures that acute and recurrent mania and melancholia are admitted in considerably greater ratio than is the case in the English rate-paid asylums. The same is true of the Belfast asylum. In the latter, however, Dr. Nolan's statement as to the increase of delusional insanity is fully borne out, there being one-fifth of the total admissions referred to this type. In England the same ratio is about one twenty-fifth. A few years ago we used to scan the Irish reports to find and report as a curiosity a case of general paralysis. Now it is half as common as in England. At Belfast about 14 *per cent.* of the deaths were attributed to this disease.

#### *Various Institutions.*

*The Lebanon Hospital, Asfurieh.*—Much activity, before recorded, is still maintained. We note that the total space available is sufficient for 95 patients. The admissions numbered 102, while the discharges numbered 91 and the deaths 11. This represents a turnover that is probably unapproached in activity in any other institution, except, perhaps, Bethlem. The recoveries were 25 *per cent.* for the males and 46 for the females; for both sexes together, 33 *per cent.* The fact that there were only three relapsed cases in the year proves that due care in assigning recovery has been exercised. The active nature of the cases, perhaps, is best shown thus: about half the cases were discharged and half the deaths occurred with under three months' treatment. Seven males and two females were the subjects of general paralysis. Twenty-four were classed as cases of dementia præcox of one sort or another, acute mania claiming 25 and acute melancholia 17.

In spite of generous aid, the institution is in sore need of contributions to enable it to meet its responsibilities. We are glad to note that, through the munificence of Mr. Frederick Greene, an "English" house is to be added, while Germany and America are contemplating the provision of houses representing their nationalities. Air-gas has been laid on, and it is reported to have a most beneficial and cheering influence over the whole institution.

*The Eastern Counties Asylum, Colchester.*—This is one of the five registered institutions for idiots and feeble-minded children which have hitherto undertaken the care of rate-paid idiots, etc. The report is of



additional interest in view of the passing of the Mental Deficiency Act. We believe that the aspirations of those institutions were that they should serve as the nucleus of institutions to be provided under that Act. Their known efficiency favoured such wishes, but, as a fact, their interests were at one time seriously threatened, not from any desire to supersede them, but from the complications arising out of the repeal of the Idiots Act. We believe that the serious resistance offered by a powerful committee, coupled with the most jealous watching of the Bill at every stage, has succeeded in obviating the danger. We have much pleasure in quoting the following from the report of the Committee, under the hand of its chairman, Lord Stradbroke, taking advantage of the opportunity to add a tribute to Dr. Turner for his incessant work on our own committee. We hear that, as he was one of the most constant attendants at its meetings, so he was foremost in dealing with the claims of his own *clientèle* with ripe experience and the soundest of judgments :

In connection with the work of the Special Parliamentary Committee, the Board deem it only fair to say that if there is one man to whom all friends of the Institution are specially indebted for his invaluable services, that man is the resident medical officer, Dr. Turner. Notwithstanding an exceptional amount of sickness amongst the inmates, notwithstanding increased responsibility and work in his position of assistant superintendent, owing to his father's absence on sick leave, Dr. Turner mastered a vast mass of detail connected with the Mental Deficiency Bill and various other measures more or less dealt with by the House of Commons or considered at committee meetings, and stood out amongst the other experts from all the institutions similar to this, as one whose conspicuous ability was fully recognised by all the Members of Parliament and others engaged in endeavouring to safeguard the interests of our beloved charity.

The subjoined extract from Dr. Turner's own report as medical officer will be read with interest. It affirms and supports what has been said by others with the greatest experience and insight into real facts :

I have therefore taken a second series of cases to which this objection cannot hold good. In this series I have omitted all those cases where mental disease is denied in the case papers unless I have been able personally to prove this negative to be true. I have included all those in which it is definitely stated that there is a family history of mental trouble, and also those in which I have satisfied myself by personal investigation that there is no hereditary taint. These together give a total of 318 patients. I made a special point in my inquiries of seeing the parents whenever possible and making notes of my own opinion of their mental capacity. In these 318 cases I find only 178, or 56 *per cent.*, have a family history of mental disease. In some even of these cases the evidence of mental taint is very remote—it is in fact so far away in the family that it is doubtful if it can have had much effect. The practical question, however, is what effect will segregation of the feeble-minded have on future generations? I am convinced that the result will be very much less than is usually claimed for it. I have little doubt that although segregation will effect *some* diminution in the numbers of the feeble-minded in the future, it will not do anything like as much in this direction as is generally anticipated. In many of those included in my list as having a family history of mental trouble, the only known fact is that an uncle, an aunt, or a cousin has become insane or has had epileptic fits. The segregation of the aunt or uncle would not have prevented the child being born. Marriage cannot be restricted only to those with no neuropathic taint in the family. In only 105 cases in my series was the taint in parents or grandparents, and it is only when it occurs in the direct line that any kind of segregation can prevent the trouble. But when these 105 records are further analysed it is seen that segregation of the feeble-minded *alone* would have had little effect, for in sixty-six cases, or practically two-thirds, the mental trouble in the previous generations took the form of insanity.

In many of these the insanity did not come on till after the children were born, so that no kind of segregation could have prevented their coming into the world, whilst for the remainder it has not even been suggested as a practical policy that people who have recovered from insanity should be detained for the rest of their lives. Of the remaining third where the taint occurred in the direct line, a parent or grandparent was a sane epileptic in 22 cases, and the segregation of this class has not yet been suggested. In only 15 cases was a parent or grandparent feeble-minded, and therefore segregation of the feeble-minded would have prevented just under 5 *per cent.* of the 318 cases in my second series. I believe the reason why many people think segregation will do more good than seems probable is because they are brought chiefly into contact with the feeble-minded under the care of the guardians or the prison authorities. My own experience is that the Poor Law cases show a much higher percentage of hereditary mental disease than the feeble-minded child of the artisan or middle class. For instance, in 74 Poor Law cases included in my second series, there was mental disease in the family in 82.5 *per cent.*, and in two-thirds of these the taint was in a parent or grandparent. This shows a really extraordinary difference compared with the figures taken from all classes, and an argument founded on Poor Law figures would be in direct contradiction to one founded on statistics from all classes of society. The reason, no doubt, is that feeble-minded fathers and mothers having feeble-minded children drift to the Poor Law because of their inherent inability to look after their children. In the artisan or middle class where the parents are healthy and the family history good, the afflicted child will generally be the best cared for of all the children, and the Poor Law will never hear anything of it. My statistics are taken from all grades except the upper classes, and probably therefore give a more average insight into the question than those taken from Poor Law cases alone.

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### Part III.—Notes and News.

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#### MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at 11, Chandos Street, London, W., on Tuesday, November 25th, 1913, under the Presidency of Dr. James Chambers.

Present: Drs. Adair, Armstrong-Jones, Beach, Bolton, Bond, Bower, Chambers, Cole, Collins, Coupland, Craig, Dixon, Donelan, Dorr, Douglas, Down, Drapes, Earls, Fothergill, Hart, Haynes, Hunter, Hyslop, Johnston, Johnstone, Kay, Keay, Lewis, Logan, Lord, MacBryan, Mackenzie, Menzies, Miller, Nelis, Oswald, Phillips, Pierce, Rayner, Russell, Savage, Sergeant, Shuttleworth, Smith, Soutar, Spence, Steen, Stewart, Thomson, Tuke.

Present at the Council Meeting: The President, Dr. Chambers, in the Chair; Drs. Adair, Bolton, Cole, Collins, Douglas, Drapes, Hart, Keay, Lewis, Lord, Nelis, O'C. Donelan, Sergeant, and Thomson.

#### MINUTES.

The minutes of the last meeting, having been printed in the Journal, were taken as read and were confirmed.

#### THE LATE SIR JOHN BATTY TUKE.

The PRESIDENT said he wished, before proceeding to deal with the items on the agenda, to refer to the great loss which Psychiatry had sustained by the death, since the last meeting, of Sir John Battly Tuke, who was one of the most distinguished members of the Association. Sir John had occupied a very prominent position in medical circles and in the public life of the city of his adoption, and he had represented his ancient University in the House of Commons. Members of

the Medico-Psychological Association highly esteemed him as one of its earliest energetic scientific workers. Many of those present were aware that he had rendered valuable services to the Asylum Workers' Association, and in his capacity as a legislator he was always a staunch and able advocate of the just claims of the medical profession. The President suggested that a message of condolence be sent to his family, and that members should signify their approval of this course by rising in their places. This sign of respect was unanimously observed.

#### THE MENTAL DEFICIENCY ACT.

The PRESIDENT said that the next business related to the administration of the Mental Deficiency Act. This measure had been under the consideration of the Parliamentary Committee and of the Council that day, and he would ask Dr. Soutar to submit to the meeting the recommendation which the Council had made in the matter.

Dr. SOUTAR said that at that day's Council meeting it was resolved that the matter was one of urgency. Now that the Mental Deficiency Act was to be put into force, the opinions and advice of medical superintendents throughout the country were being asked by the various bodies in regard to a variety of matters in connection with this Act; and it was thought advisable to obtain from the general meeting an expression of opinion as to what sort of advice should be given by the Association to the authorities making inquiries. Therefore, after consideration in Council, it was decided to submit to the general meeting the following resolution: "That it is the opinion of this general meeting of the Medico-Psychological Association that the Asylum Visiting Committees of the Borough and County Councils, and the Asylum Boards of Lancashire and Yorkshire, be the Committees for the local administration of the Mental Deficiency Act, while retaining their statutory powers under the Lunacy Act." Members would recognise that this suggestion was in absolute accord with the advice which the Association had hitherto given concerning matters of a similar nature. It would be remembered that when the institution of a central Board was under consideration the Association very strongly advocated that the Commissioners in Lunacy should be the body primarily entrusted with the administration of the Mental Deficiency Act, and that this view prevailed. The reason adduced was that this was the body, above all others, which possessed knowledge and experience of the type of work which would fall to those whose function it would be to administer the Act. Exactly the same argument prevailed with regard to the local conditions: that the visiting committees of our borough and county councils, being conversant with asylum administration, and with mental deficiency in any form in which it might be manifested, were essentially the bodies which should be called upon to administer the Act locally. That was the basis upon which was founded the proposal which the Council now suggested to the general meeting. In a word, those connected with borough and county asylums, being those best informed on this matter, should be the people locally entrusted with the administration of this Act. He accordingly moved the resolution.

Dr. WOLSELEY LEWIS, in seconding the resolution, said that at the meeting of the Parliamentary Committee held that day, considerable discussion took place, and there was some little divergence of opinion. But those medical superintendents of county asylums who were present recognised that, in some districts, committees might be appointed, other than the asylums committees, to undertake the local administration of the Mental Deficiency Act. That had already taken place in the London County Council; and he understood that the Committee which was appointed by the London County Council would not have the statutory powers which the asylums committees possessed. It was felt by the Council that at this time, when superintendents of public asylums were being asked by their committees their opinions on these subjects, it would be highly desirable to discuss the question at this general meeting, so that, as the mover of the resolution said, some consensus of opinion might be arrived at. If this resolution should prove acceptable to the meeting, it might be sent to the Home Secretary and other persons in authority, so that they should know what the views of the Association were.

Dr. ROBERT ARMSTRONG-JONES reminded the meeting of a letter by himself on



the subject which had appeared in *The Times*, and which probably many members had read, showing that at that date the matter was ripe for discussion. He felt regretful that the Association had not made its influence evident a little earlier than this. Matters concerning the Mental Deficiency Act had been under discussion in every county in this country and he had himself been written to by several authorities authorised to carry out the provisions of the Act. He rose to say how sorry he was that the Association, as a body, had waited until the matter had been under discussion in nearly every county before taking any step. This particular matter had already been under discussion in various counties for some time, as the Act came into force in August last. In his opinion, it was useless to present now to the Home Secretary such a resolution as this, considering that that official had, through the Act, already devolved powers to the various committees and counties to act, and when the matter had already been considered by most of the counties and authorities.

Dr. THOMSON said he could not agree with Dr. Armstrong-Jones. In an East Anglian county—Norfolk—the subject was only now beginning to be considered, and he had himself been co-opted on to a provisional committee appointed to consider it. He believed many other county superintendents were in a similar position to his own, namely, that their advice and co-operation were being sought, and the matter was not regarded as cut and dried already, as Dr. Armstrong-Jones's remarks would lead one to suppose. The Association might be somewhat late in submitting the question to the meeting in this way, but that was excusable for various reasons. He was entirely in sympathy with the resolution. He saw difficulties ahead. The asylums committee would have to co-opt representatives of other authorities. There was also the difficult question of working under the different financial proposals in two separate Acts. Though he agreed with Dr. Armstrong-Jones as to the futility of sending such a resolution as that now proposed to the Home Secretary, it should, he thought, be sent to their colleagues in the various asylums in England and Wales. He suggested it should also be sent to the chairmen county of councils, and to the chairmen of the existing visiting committees. He did not put this suggestion forward as an amendment.

Dr. SOUTAR pointed out that the resolution which he moved was one resolution, while the decision as to whom it should be sent out to would constitute a separate motion. His own resolution should be submitted first.

Dr. SHUTTLEWORTH said he would like to make one remark concerning the motion, though some might regard it as superfluous. The resolution did not mention that asylum committees for the administration of the Mental Deficiency Act must be supplemented by women and by guardians. It should be in the minds of all present that this alteration must take place.

Dr. J. B. SPENCE said he had the opportunity of hearing the discussion on this subject at the Parliamentary Committee meeting, and he thought certain conclusions were there reached, which were not included in the minute now brought forward by the Council. Possibly the Council, in its wisdom, had seen fit to alter them. Perhaps he would be allowed to explain, for Dr. Armstrong-Jones's benefit, how this matter arose. The Association was asked to appoint delegates to the new association about to be formed, the Central Association; and the question arose as to what instructions delegates were to take to the Central Association when they had been appointed. He understood it was decided to ask this general meeting to recommend that the present asylums committees, with representatives from the education committees of the various counties co-opted, should act as the Mental Deficiency body, but not necessarily that that body should act as the committee for the county asylum; the County Asylum Committee should remain as at present, which was a somewhat different thing from that which had been put forward. The county asylums should still be administered as they were now, but let whatever means which might be adopted for the treatment of mental deficients be in the hands of a committee of which at least a large proportion should be members of the Asylums Committee, with members of educational committees and ladies co-opted for the special purposes of the Act. That was what he would like to see carried, but he would not put himself into opposition, nor bring forward another motion, because the Council had doubtless good reason for any alteration they had made.

Dr. ARMSTRONG-JONES said he felt much obliged to Dr. Spence for his explana-



tion, which removed practically any opposition he might have had. If the suggestion referred to were acted upon, he saw no objection. He had been consulted by the six North Wales counties as to the sort of advice to be given. No one seemed to know exactly what advice to give until a consensus of feeling had been obtained by such a meeting as the present one. He had been asked by the Surrey County Council to advise, and that county had appointed their own Asylums Committee to consider this, with the view of acting on the basis of the resolution now before the meeting. It was known that the asylums were the proper places to have charge of some of the people who were to come under the £120,000 scheme; and the Lunacy Commissioners and Asylums Committees had brought the asylums of this country to a state of high perfection in regard to the treatment of mental defectives. It would be wiser if he were to withdraw his objection to the resolution.

Dr. SEYMOUR Tuke said he also was present at the Committee discussions that day, and the impression he received was, that the Council did not wish the Mental Deficiency Committee to take the place of the Asylums Committee, or to be joined on to it: the desire was to keep the two committees distinct, but to have the Asylums Committee as the basis of the Mental Deficiency Committee, as Dr. Spence had said; and the Asylums Committee would continue as the Asylums Committee.

Dr. SOUTAR replied that from what the various speakers had said the meeting was evidently in agreement with the purpose of the Council, although possibly the resolution failed to adequately express that intention; yet it was carefully constructed word by word at the Council meeting. If the two parts of the resolution were carefully read, they would be found to mean that, for the purposes of the Mental Deficiency Act, the existing visiting committees of borough and county asylums should be the primary body to deal with cases under the Act. They were bound by the Act to co-opt certain persons. There was a proviso at the end of the resolution for the purpose of guarding what Dr. Spence and others thought should be guarded, and with which he agreed. It ran—"while retaining their statutory powers under the Lunacy Act." He hoped this proviso would ensure what Dr. Spence desired, that the visiting committees should continue to do their duties, and should perhaps form the majority on the committees to administer the Mental Deficiency Act; but they were bound to co-opt certain persons, and so there was no need to refer to that in the resolution.—[Dr. Spence: Will you add some such words as "with such additions as the Act calls for, or authorises"?]—Dr. Soutar rejoined that no resolution of the Association could override an Act of Parliament. The only question was as to whether the Association would urge that the body to be primarily called upon to discharge these functions should be the visiting committees of asylums or some other board, because there were alternatives in the Act. The resolution approved of the visiting committees. Whatever body primarily came into existence, it was bound to co-opt certain other persons, hence it was not necessary to state that in the resolution. The principal point to guard—and it was a very important one—was that the visiting committees should still carry on the duties they were now performing under the Lunacy Act, and the only point he had doubt upon was as to whether the last proviso in the resolution was sufficient—"while retaining their statutory powers under the Lunacy Act." He was anxious to have the resolution amended in any way to give effect to the purpose in view.

Dr. SPENCE said he felt that the Council had considered the matter carefully, and therefore he had no opposition; but the motion brought forward by the Council as representing their views read somewhat as if the Association wanted to keep too much in the hands of the specialty. He would have preferred that the resolution embodied words recognising the bodies which were to be called in to assist the county committees in the discharge of their duties as members of the Mental Deficiency Committees.

Dr. BOWER agreed that some words referring to the co-opted members should be included in the resolution; otherwise it would be open to misconception. People might say—"You do not appear to know you cannot have these Committees composed entirely of your Asylum Committees." The word "mainly" or its equivalent should have a place somewhere in the resolution; there should be mention of the co-opting function as required by Act of Parliament.

Dr. LANGDON DOWN said that if the wording were reversed it would make the resolution clearer; and say, "The Committee under the Act should be based upon members of visiting committees of asylums."

Dr. THOMSON said he expected that the same difficulties were going on centrally, and he was disappointed to find that no information had leaked out as to what the Commissioners in Lunacy were doing, whether the Commissioners in Lunacy were going to swallow the Board of Control, or whether the Board of Control would swallow the Lunacy Commissioners.

Dr. SIDNEY COUPLAND said he strongly hoped the proposed resolution would be passed and sent to the Board as soon as possible.

Dr. SOUTAR said it was very desirable that the resolution should be absolutely unanimous; the speeches showed that the feeling was unanimous; it was a mere question of adding a word or two. He saw no objection to incorporating in the resolution words which showed that the Association did recognise that the Asylum Visiting Committee must co-opt certain persons to be members. The Council certainly fully recognised that, but it seemed to be thought that the wording should show the recognition.

Dr. SHUTTLEWORTH suggested the words—"With such additions as the Act requires."

Dr. SOUTAR said the resolution would now read: "That it is the opinion of this general meeting of the Medico-Psychological Association of Great Britain and Ireland that the Asylum Committees of the Borough and County Councils, and the Asylum Boards of Lancashire and Yorkshire, with such additions as the Act requires, be the Committees for the local administration of the Mental Deficiency Act, while retaining their statutory powers under the Lunacy Act."

Dr. SHAW BOLTON said he thought the clause at the end of the resolution would come better at the beginning, otherwise it looked as if the Committee of Control, together with the other members, were to possess the powers of the present visiting committees.

Dr. SOUTAR said his objection to this suggestion was, that a body which had no powers could not retain powers.

Dr. WOLSELEY-LEWIS said it was only a question of terminology, as all agreed with the substance of it.

Dr. SOUTAR said he hoped the resolution was now in its final form; it read: "That it is the opinion of this General Meeting of the Medico-Psychological Association of Great Britain and Ireland that the Asylum Visiting Committees of the County and Borough Councils and the Asylum Boards of Lancashire and Yorkshire (with such additions as the Act requires) should be the Committees for the local administration of the Mental Deficiency Act, and that the existing Visiting Committees should retain their statutory powers under the Lunacy Act."

Carried.

Dr. JAMES STEWART proposed that copies of the resolution be sent to the chairman of committee of each county and borough asylum in England and Wales, to the clerks to the visitors of each county asylum and borough asylum in England and Wales, to the heads of the county councils in England and Wales.

Dr. BOLTON suggested, in addition, the Home Secretary and the Chairman of the Board of Control.

Dr. SHUTTLEWORTH seconded.

Dr. ARMSTRONG-JONES said including the county councils was very important, as already in some places the matter was in the hands of the Education Committee. Carried.

Dr. WOLSELEY-LEWIS said, as a matter of correct terminology, it should be the clerks to the county councils.

Dr. SPENCE asked whether it was intended that this should refer to Scotland.

Dr. OSWALD said he would not like the resolution to be sent to the corresponding officials in Scotland without careful consideration on the matter.

A member said it was not necessary in Scotland.

#### THE STATUS OF ASSISTANT MEDICAL OFFICERS.

The PRESIDENT said that the Council, at its meeting that afternoon, wished to submit to the general meeting a resolution regarding the status of assistant medical officers. He asked Dr. Bedford Pierce to introduce the matter.

LX.

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Dr. BEDFORD PIERCE said it would be known to most of those present that the Durham County Council had sent to the visiting committees throughout the country an invitation to a conference to consider a number of matters affecting the welfare of assistant medical officers. So far as he knew at present the date of that conference had not yet been settled, and many of the various committees approached had not yet replied to the invitation. Possibly some might not have received an invitation. That such a conference had been proposed was a matter of considerable importance, and the Status Committee of the Association felt that it was a project which should receive their encouragement. The matter had been referred to the Council that day and it approved of a resolution being submitted to the general meeting. He now had pleasure in moving:

"This Association, in general meeting, is pleased to hear that the Durham Visiting Committee has recently sent an official invitation to a general conference of visiting committees to consider various questions affecting the welfare of assistant medical officers. The Association authorises the committee appointed to consider the status of psychiatry, to place before this conference, or any committee appointed by it, all information which may be in its possession, and to offer all possible aid, by submitting personal evidence or otherwise."

He hoped that resolution would be passed.

Dr. SOUTAR said he had much pleasure in seconding Dr. Bedford Pierce's resolution. The mover had said all that was essential in its support. The Durham body was anxious to receive information on a matter on which the Status Committee was able to impart facts, and anxious to do so. The best thing to do was to tell them what they could on the subject of the position of asylum assistant medical officers, and hope that from such a conference some enlightenment would be thrown on this complicated matter which the Status Committee of the Association was still considering.

Carried.

#### ELECTION OF CANDIDATES AS ORDINARY MEMBERS.

The PRESIDENT nominated Dr. Menzies and Dr. Dixon to act as scrutineers for the ballot. This resulted in the unanimous election of the following gentlemen as ordinary members.

Crookshank, Francis Graham, M.D.Lond., M.R.C.P., Physician (Out-patients), Hampstead General Hospital, etc.; formerly Assistant Medical Officer, Northampton County Asylum, 53, Welbeck Street, and Felpham, Sussex. (Proposed by Drs. R. Langdon-Down, J. R. Lord, and M. A. Collins.)

Eder, M. D., B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer, Deptford School Clinic, 7, Welbeck Street, W. (Proposed by Drs. Bernard Hart, R. Langdon-Down, and M. A. Collins.)

Hewson, R. W. Dale, L.R.C.P. & S.Ed., L.R.F.P. & S.G., Assistant Medical Officer, Coton Hill Hospital, Coton Hill, Stafford. (Proposed by Drs. J. W. Stirling Christie, J. B. Spence, and R. W. Hewson.)

Montgomery, Edwin, F.R.C.S.I., Diploma Psych. Medicine, Manchester, Assistant Medical Officer, County Asylum, Prestwich. (Proposed by Drs. David Orr, W. Starkey, and R. S. Rows.)

Walker, Robert Clive, M.B., Ch.B.Ed., Senior Assistant Medical Officer, West Riding Asylum, Menston, near Leeds. (Proposed by Drs. S. Edgerley, Gilbert Malise Graham, and T. Stewart Adair.)

#### ELECTROLYTIC CHLORINE BLEACH FOR ASYLUM LAUNDRIES.

By Dr. E. FAULKS,  
Bexley.

These notes refer to an electrolyser installed at Bexley Asylum by the sub-committee, on the recommendation of Dr. Stansfield. It is made by Messrs. Grether and Co., of Manchester, under the patents of Messrs. Haas and Oettel. and is intended for the production of bleaching and disinfecting liquor by the electrolysis of saline. It is claimed that by the use of this process fouled clothing

is very satisfactorily cleansed, disinfected, and deodorised with a minimum of injury to material and an economy of soap and labour.

The apparatus consists of (1) a tank in which common brine is mixed, having an outflow into a small cistern protected by a ball-valve; (2) a small cistern, through which the brine passes and is filtered, and fed into the electrolyser with a regulated flow; (3) the electrolyser, a small earthenware tank containing two carbon-plate electrodes and several glass partitions over and under which the brine alternately flows; (4) a tank into which the bleach is collected and stored.

The brine is mixed over-night—that is to allow foreign matter to settle—and should be of a specific gravity of "4° Baume." The feed from the small cistern into the electrolyser should be regulated to allow of a flow of a litre a minute. Immediately the electrolyser is set to work hydrogen is liberated by the formation of sodium hypochlorite ( $\text{NaClO}$ ), and the bleach under these conditions has an available chlorine content of 3 per 1,000.

The bleach is employed in two ways and for two purposes:

(1) For the cleansing and disinfection of ordinary foul clothing the liquor is diluted down to a strength of '5 per 1,000 available chlorine, *i.e.*, three bucketfuls are thrown into the 40-gallon reverse rotating washer. Into this is put the clothing, previously steeped in cold water, and the machine is rotated for thirty minutes. The garments are then washed in the ordinary way.

(2) For the removal of intractable stains, and the sterilising of dangerously infected clothing, a 2 per 1,000 bleach is used, and in this the materials are steeped for a half to four hours, according to their state. They are then treated as ordinary laundry.

So much for the process. Its value depends of course upon the germicidal power of the bleach, its capacity for removal of stains, and its safety from the point of view of injury to materials.

To consider bactericidal qualities of the bleach. Its carbolic co-efficient is given by Fowler as 21. Roughly, this means that a bleach containing 1'15 per 1,000 of available chlorine = in germicidal power 1 in 20 carbolic. Various workers have tested its capacity, and from different sources I give the following facts:

1 per 1,000 found to be more powerful than 2 per cent.	} These with a large percentage of organic matter present.
lysol.	
" " " = $\frac{1}{2000}$ hyd. perchlor.	
" " " 3 per 1,000 killed <i>B. typhosus</i> in 15 minutes.	

" " " 5 " " anthrax spores in 15 minutes.

I have made several tests to verify these statements, not only in the laboratory, but in the laundry during the working of the process. The laboratory tests have been made upon *B. coli communis*, *B. typhosus*, staphylococci and streptococci.

In the case of the *B. typhosus*, tests were made in hanging drops, and were therefore rough. Therein the bleach killed the bacilli in twenty-two minutes with '5 per 1,000 mixture, and tubes inoculated from the drop remained sterile after thirty-six hours.

Next, mixtures of bleach with cultures of *B. coli communis*, staphylococci and streptococci were made in varying strengths. It was found that always where the mixture contained more than '3 per 1,000 chlorine no cultures could be made from the mixture. The '3 per 1,000 killed all bacilli, but not cocci.

We then decided on the use of a '5 per 1,000 solution in the rotary washer and to test its efficacy. I took numerous samples from the dregs in the washer after the clothes had been treated, (1) when no bleach was used, (2) when the chlorine was in use. These samples, taken under aseptic conditions, were then diluted down to (1)  $\frac{1}{2}$ , (2)  $\frac{1}{125}$ , (3)  $\frac{1}{15000}$ . Of each of these dilutions '04 c.c. was spread on an agar-plate and after twenty-four hours' culture at 35° C. the colonies counted. The results in brief, averaged from a series of eighteen plates, showed that in the dregs of the washer when no chlorine was used there were 150,000 organisms per c.c. In the dregs following the chlorine treatment, only four colonies were found in the whole series of plates, proving the dregs to be practically sterile.

In testing the efficacy of the bleach for removing stains, I have chosen blood, faecal and menstrual stains as the most difficult of removal from clothing, and of cocoa-sediment stains in table-linen. In the case of blood, faeces, and cocoa sediment, strips of material have been soaked in the staining medium for two hours, dried, left for four days, then steeped in '5 per 1,000 and 2 per 1,000 for half an



hour, four and twelve hours with no agitation or rubbing. The test is a severe one, and the results I have here if anyone should care to see them. It was found to ensure absolute whiteness in the materials, four hours' steeping in the 2 per 1,000 gave the best practical result. It is necessary that the fluid should have easy access to all parts of the clothing. With regard to menstrual stains, perhaps the most difficult of all to remove, in most cases it was found that 2 per 1,000 bleach in half an hour removed every trace of stain, whilst in four hours *all* were quite clean, with the sole exception of one sample in which some inexplicable black stain was present, which required seven hours to remove.

I would observe that the tests were much more severe than would occur in ordinary washing, as drying and "caking" of organic material are the most potent factors in the permanent staining of clothes.

To determine the destructive power, if any, of the bleach upon ordinary materials in use, I have taken standard samples of Grandrill, Forfar, sheeting, calico, woollens, steeped in .5 and 2 per 1000 strengths for half an hour, four and twelve hours, and after drying, had them tested with a machine for the purpose. In the case of woollens the sample, cut with the warp and treated for twelve hours in the strong solution, tore at 25 lbs. less strain than the untreated fabric. This treatment is very much more severe than in ordinary use. In all the other fabrics there was no change whatever in the tensile strengths.

(6) To sum up, we have here a cheap bleaching and disinfecting fluid, which in a strength of .5 per 1,000 will sterilise anything in half an hour (provided it has satisfactory access to all parts), which will remove all ordinary stains from all clothing, and which in that strength, and for that period, will not injure the most delicate of fabrics, with the sole exception of silk. It is simple to work and to produce. It is not in the ordinary sense poisonous; it is an excellent deodoriser; and leaves clothing a clear white colour, such as is rarely seen when the ordinary washing is relied upon. It entirely obviates supplementary washing of goods, which, when dried, show up all partially removed stains. It will reduce the soap bill, will do away with all the violent scrubbing which is so often employed to *tear* stains out, and will thereby lengthen the life of the clothes. It thus possesses those three good asylum qualities—economy, utility, and safety.

Dr. DONELAN said it was certainly a most interesting paper, and he would like to know something more about the method of producing the bleaching fluid in the first instance. He asked whether it needed a special apparatus for its production, and of what strength was the original fluid prepared; and when it was ready for use was it merely a mechanical solution of chlorine in the water, or was it a chemical compound?

Dr. BOLTON asked whether the process was available for coloured clothing or only for white fabrics.

A MEMBER asked what was the cost of the electricity required, in units.

Dr. MENZIES said the Association was very glad to hear practical papers of this kind brought forward. The idea of using chlorine for bleaching was much older than anyone in that room, and those disinfectants which depended upon its action usually contained sodium hypochlorite. It absolutely ruined linen or cotton fabric, as well as flannel. Nascent chlorine was a strong reducing agent; it took the oxygen out of the fabric, but the harm it did was not manifested at once. The fabric slowly re-oxidised itself, and did not have an effective life of more than two years. The curse of public laundries was that they used nascent chlorine because it provided an easy way of cleansing. A substance called "Chloros," which contained, he believed, about 40 *per cent.* of hyperchlorite, was sold by the United Alkali Company, but he urged members not to be led into using such substances in the laundry, as they rotted the clothes on which they were used, however useful they might prove as disinfectants.

Dr. FAULKS replied that, in the first place brine was mixed, and this was electrolysed, causing the production of sodium hyperchlorite. That was the whole of the process, which was quite simple. He could not, at the moment, say what the strength of the brine was. The apparatus for the purpose now in use in Bexley Asylum was made in Manchester, and its cost was about £70 in all, including the tank in which the brine was mixed, the cistern regulating the flow, the electrolyser, and the tank in which it was afterwards collected. In reply to the question whether all clothing could be sterilised and cleansed in that way, the answer was

in the negative; it could not be used on dyed garments. It was used at Bexley Asylum only for bed-linen and personal linen. The electrical engineer said it would cost about eightpence a day to keep the apparatus running the whole time. The machinery installed in Bexley would deal with 5,000 articles. With regard to Dr. Menzies' remark as to the damage caused by chlorine to clothes, that depended on the kind of chlorine used. The original method of using chlorine was as chloride of lime; but that was dangerous, not because of the chlorine, but because of the lime; the lime and its various salts became deposited in the fabric, and rotted and discoloured it, giving it a yellow hue. At Bexley it had not been used long enough to see what its ultimate effect on the life of the clothing was, but he had talked to the laundry mistress—an officer of more than the average intelligence—about it, and after her experience in a large workhouse, she was very strongly in favour of it. She said it not only did not rot the clothing, but actually lengthened the time during which the latter continued effective, because so many processes were not required as in the ordinary method; the clothing was simply bleached and then washed, instead of attempts being made to tear the stains out. It was found to be a wonderfully good steriliser, and it had displaced the Washington-Lyon, which was now used only for some dyed goods occasionally.

#### DEMONSTRATION.

Dr. E. FAULKS exhibited and explained the mechanism of an automatic temperature regulator for the continuous hot bath.

He said that this appliance had been in use at Bexley Asylum for sixteen years, and it had been found very satisfactory. He had never seen trouble arise in connection with it. It was as near an ideal temperature regulator as one could well wish for. It was the invention of the resident engineer at the Asylum, and was made by Royle's, of Manchester.

#### "DYSENTERY, PAST AND PRESENT," BY H. S. GETTINGS, L.R.C.P.

This paper was contributed to the last Annual Meeting and has appeared in the *Journal of Mental Science* for October, 1913. The discussion was adjourned to the November Quarterly Meeting, when it was opened by Dr. SIDNEY COUPLAND. Dr. SPENCE, Dr. ARMSTRONG-JONES and Dr. SHAW BOLTON also discussed the paper, and Dr. GETTINGS replied (see page 39).

The Members dined together in the evening at the Café Monico.

#### NORTHERN AND MIDLAND DIVISION.

THE AUTUMN MEETING of the Northern and Midland Division was held by the courtesy and at the kind invitation of the Visiting Committee at the Borough Mental Hospital, Leicester, on Thursday, October 23rd, 1913.

Dr. J. F. Dixon presided.

The following members were present: Drs. H. M. Baker, D. Bower, G. Dickson, J. F. Dixon, W. J. A. Erskine, A. T. W. Forrester, J. W. Geddes, C. L. Hopkin, W. S. Kay, R. J. Legge, C. H. G. Lyall, H. J. Mackenzie, B. Pierce, R. C. Stewart, T. S. Adair (*Hon. Divisional Secretary*), and six visitors—Drs. Blakesley, Bryan, and T. A. Johnson, and Messrs. Pick, Trevor S. Smith, and H. W. Simmonds.

Apologies were received from the Chairman and Vice-Chairman of the Visiting Committee, from the President and Secretary of the Association, and others.

The minutes of the last meeting were read and confirmed.

A ballot was taken for Ernest Lionel Forward, M.R.C.S., L.R.C.P. Lond., Assistant Medical Officer, The Coppice, Nottingham, proposed by Drs. Hunter, Adair, and Kelly, as an ordinary member of the Association, and he was unanimously elected.

Drs. McDowall, Pierce and Street were unanimously re-elected to form the Divisional Committee for the next twelve months.

Dr. BEDFORD PIERCE made some remarks with reference to the Status of British Psychiatry and Medical Officers Committee, and suggested that the matters contained in the Report of that Committee might be considered at the April Meeting of the Division next year.

Dr. T. ARNOLD JOHNSTON then read a very interesting paper on the "Position of Pathology in Mental Hospitals." He referred to the difference in psychological ideas to-day as compared with formerly. He dealt with the relation of the medical superintendent and the medical officers to laboratory and research work, and to the ordinary routine work in an asylum. He considered the "incubus of routine" stifled ambition, and thought the medical officer needed encouragement and training as a stimulus to his engaging in laboratory work; that the pathological department ought to concern itself with the morbid conditions incident to ordinary illness, as well as those specially associated with mental maladies. There was need of a system of educating and interesting the medical officer, of a series of centres for the higher technical forms of laboratory work, and of an interchange and collating of proved research facts and their application to treatment. Altogether the paper brought forward many very interesting and important points.

Remarks followed by Dr. DIXON, Dr. BLAKESLEY, Dr. PIERCE, Dr. BRYAN, and others.

In the absence of Dr. MacPhail his paper on "Some Observations on the Cerebro-Spinal Fluid" was read by Dr. LYALL (see page 73).

A hearty vote of thanks was accorded to Dr. MacPhail for his paper.

Dr. STEWART offered some suggestions in the way of improving the meetings of the Division, to make them more attractive and interesting. He thought the Hon. Divisional Secretary might select some suitable subjects and invite various members to take them up for discussion.

The meeting terminated with a hearty vote of thanks to the Visiting Committee of the Hospital and to Dr. Dixon for their kindly welcome and hospitality.

#### SOUTH-WESTERN DIVISION.

THE AUTUMN MEETING of the Division was held at the Devon County Asylum, Exminster, on Friday, October 24th, 1913.

There were present: Dr. Bertha Mules, Drs. Aveline, Davis, Eager, Jackson, Macdonald, McBryan, Morton, Lavers, Scott, Phillips, Perdrau, Waddelow Smith, and Blachford (Divisional Secretary); Drs. Gates, Russell Coombe, and Mr. Ackland were visitors.

Dr. A. N. Davis was voted to the Chair.

Letters of regret at their inability to be present were read from Drs. Bullen, Chambers, Nelis, and Soutar.

The minutes of the last meeting were read and signed.

Dr. Blachford was nominated for re-election as Hon. Divisional Secretary, Drs. Aveline and Nelis as representative members of Council, and Drs. Pope and Bazalgette as members of the Committee of Management.

The following were elected members of the Association:

John Barfield Adams, L.R.C.P., L.R.C.S. Edin., 119, Redland Road, Bristol. (Proposed by Drs. Blachford, Bazalgette, and Phillips.)

John Robinson Benson, F.R.C.S. Eng., L.R.C.P. Lond., Resident Physician and Proprietor, Fiddington House, Market Lavington, Wilts. (Proposed by Drs. H. MacBryan, Blachford, and Bazalgette.)

C. F. Bainbridge, M.B., Ch.B. Edin., Second Assistant Medical Officer, Devon County Asylum, Exminster. (Proposed by Drs. A. N. Davis, Eager, and Blachford.)

H. Hope Scott, L.R.C.S., L.R.C.P. Edin., Third Assistant Medical Officer, Devon County Asylum, Exminster. (Proposed by Drs. A. N. Davis, Eager, and Blachford.)

As no invitation had been received from a place at which to hold the Spring Meeting it was left to the President and Hon. Divisional Secretary to decide and arrange.

Dr. D. J. JACKSON read a very interesting paper on "The Clinical Value and Significance of Leucocytosis in Mental Disease," and circulated photographs of charts he had prepared (see page 56).

Dr. DAVIS opened a discussion on the "Mental Deficiency Bill," in which Drs. AVELINE, R. EAGER and MACDONALD took part.

The meeting closed with a vote of thanks to Dr. Davis for his hospitality to the members.

## SOUTH-EASTERN DIVISION.

THE AUTUMN MEETING of the South-Eastern Division was held, by the courtesy of Dr. M. A. Collins and the Visiting Committee, at Ewell Colony for Epileptics, Epsom, on Tuesday, October 7th, 1913.

Among those present were: Drs. G. F. Barham, G. N. Bartlett, G. S. Blandey, D. Bower, P. C. Campbell, J. Chambers, G. Clarke, R. H. Cole, M. A. Collins, A. W. Daniel, W. T. Donaldson, J. H. Earls, E. Faulks, H. E. Haynes, G. H. Johnston, H. A. Kidd, J. R. Lord, E. T. Pasmore, N. H. Oliver, C. Rolleston, J. N. Sergeant, J. J. M. Shaw, T. E. K. Stansfield, and R. H. Steen.

The visitors included the Rev. G. Boys Johnston, the Rev. J. Woodhouse, Drs. G. H. Stevenson, J. Stewart, C. G. Welch, S. Welch, and Messrs. T. Hunter, H. F. Keene, and W. C. Clifford-Smith.

Letters and telegrams regretting inability to be present were received from Drs. J. L. Baskin, F. Beach, J. V. Blachford, C. Hubert Bond, C. Caldecott, F. H. Edwards, C. T. Ewart, C. F. Fothergill, F. C. Gayton, D. Hunter, R. Jones, J. Keay, H. Kerr, Lewis, R. Miller, F. W. Mott, W. F. Nelis, J. G. Porter Philips, de Steiger, G. E. Shuttleworth, R. Percy Smith, F. R. P. Taylor, and D. G. Thomson.

During the morning the members and guests visited the various villas, the adjoining workshops, the intervening gardens, and the farm. At one o'clock they were entertained to luncheon in the recreation hall.

The Meeting of the Divisional Committee was held at 2 p.m.

The General Meeting was held at 2.30 p.m., Dr. Chambers in the chair.

The minutes of the last meeting, having been printed in the Journal, were taken as read and confirmed.

The invitation of Dr. Seymour Tuke to hold the Spring Meeting of the Division at Chiswick House on April 30th, 1914, was unanimously accepted with much pleasure.

Dr. J. Noel Sergeant was elected Hon. Secretary of the Division in place of Dr. David Hunter, who had left the Division on his appointment as Medical Superintendent to the Coppice, Nottingham.

The following gentlemen were elected Ordinary Members of the Association:

John Munro Gage, L.R.C.P. & L.R.C.S.I., Assistant Medical Officer, Earlswood Asylum, Redhill, Surrey, and Harold Freize Stephens, M.R.C.S.Eng., L.R.C.P. Lond., Assistant Medical Officer, Earlswood Asylum, Redhill, Surrey.

Dr. Kidd proposed and Dr. Stansfield seconded a vote of thanks to Dr. David Hunter, the late Secretary, with an expression of regret that the Division was losing his valuable services. This was carried unanimously.

## CONTRIBUTIONS.

Dr. T. E. K. STANSFIELD read a paper on "The Villa or Colony System for the Care and Treatment of Mental Disease" (see p. 30).

Owing to the lateness of the hour it was agreed that Dr. Faulks' paper should be read at the next meeting of the Association.

Votes of thanks were accorded to the Visiting Committee of the Colony and Dr. Collins for their hospitality.

At the conclusion of the meeting members and guests repaired to Dr. Collins' house in response to Mrs. Collins' kind invitation to tea.

In the evening the members dined together at the Café Monico.

## SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Medico-Psychological Association was held in the Royal College of Physicians, Queen Street, Edinburgh, on November 21st, 1913.

Present: Sir Thomas Clouston, Drs. Bruce, Easterbrook, Gostwyck, Havelock, Hotchkis, Carlyle Johnstone, Keay, Kellas, Kerr, Lawrie, Macpherson, Marr, Tuach Mackenzie, T. C. Mackenzie, McRae, G. M. Robertson, Ford Robertson,



Dunlop Robertson, Sturrock, and R. B. Campbell (Divisional Secretary), Dr. Chalmers Watson being present as guest.

Sir Thomas Clouston occupied the chair.

Before taking up the ordinary business of the meeting the Chairman referred in appropriate terms to the loss which the Association and the specialty of Psychiatry had sustained since last meeting through the death of Sir John Batty Tuke, a distinguished physician, and an honorary member of the Association. It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Medico-Psychological Association desire to express their deep regret at the loss of Sir John Batty Tuke, and their sympathy with the members of his family in their bereavement. The Secretary was instructed to transmit an excerpt of the minute to Lady Tuke.

The Chairman also referred to the recent resignation of Dr. Urquhart from the Medical Superintendship of Murray's Royal Asylum, Perth, and also to the resignation of Dr. Watson from the Medical Superintendship of Govan District Asylum, and he thought that these events could not pass without the Association recognising the long and valuable services which both members had rendered in the interest of lunacy, and at the same time expressing the hope that they would be long spared to enjoy their well-earned retirement. It was unanimously resolved that the Secretary be instructed to send an excerpt of the minute to Dr. Urquhart and Dr. Watson.

The minutes of the last Divisional meeting and the special meeting held on June 21st, 1913, were read and approved, and the Chairman was authorised to sign them.

Arising out of the minutes of last meeting, Dr. KEAY asked if anything had been done to bring royal asylums into line with district asylums so far as pensions to the members of the staff were concerned.

Dr. G. M. ROBERTSON stated the difficulties which the boards of royal asylums had met in their endeavour to have their claims recognised under the Mental Deficiency Act in a similar way to parochial asylums and lunatic wards of poorhouses. He stated that the Royal Asylums Boards still had the matter under consideration, and that he was hopeful that a private Bill might be introduced into Parliament some time soon dealing with the payment of superannuation allowances on the same lines as presently exists in district asylums.

The SECRETARY read a letter which he had received from Dr. Chambers, President of the Association, regretting his inability to be present, and apologies for absence were intimated from Drs. Alexander, Crichtlow, Oswald, and Shaw.

The Business Committee was appointed, consisting of Drs. Carlyle Johnstone, Keay, Robertson, McRae, Orr, and the Divisional Secretary.

Drs. G. Douglas McRae and Neil Kerr were nominated for the position of representative members of Council, and Dr. R. B. Campbell was nominated for the position of Divisional Secretary.

The following candidates, after ballot, were admitted to membership of the Association:

- (1) Carl Petter Carlsson, M.B., Ch.B.Edin., Second Assistant Medical Officer, Stirling District Asylum. (Proposed by Drs. Campbell, Keay, and Gostwyck.)
- (2) John Cruickshank, M.D.Glas., Pathologist, Crichton Royal Institution, Dumfries. (Proposed by Drs. Easterbrook, Chambers, and Gilmour.)
- (3) Laura Katherine Davies, M.B., Ch.B.Edin., Pathologist and Assistant Medical Officer, Edinburgh District Asylum. (Proposed by Drs. Keay, Campbell, and Steele.)
- (4) David George Lindsay, L.R.C.P., L.R.C.S.Edin., L.R.F.P.S.Glas., Senior Assistant Medical Officer, Dundee District Asylum. (Proposed by Drs. Tuach Mackenzie, Keay, and Campbell.)
- (5) Magnus Ross Mackay, M.B., Ch.B.Edin., Assistant Medical Officer, Inverness District Asylum. (Proposed by Drs. T. C. Mackenzie, Keay, and Campbell.)
- (6) Ian R. Macleod, L.R.C.P., L.R.C.S.Edin., L.R.P.F.S.Glas., Second Assistant Medical Officer, Montrose Royal Asylum. (Proposed by Drs. Havelock, Leggett, and Campbell.)
- (7) Celia Mary Colquhoun Macneil, M.B., Ch.B.Edin., Pathologist, Stirling District Asylum. (Proposed by Drs. Campbell, Keay, and Gostwyck.)
- (8) John Murray Moyes, M.B., Ch.B.Edin., D.P.M.Leeds, Second Assistant

Medical Officer, Crichton Royal Institution, Dumfries. (Proposed by Drs. Easterbrook, McRae, and Chambers.)

(9) Henry Yellowlees, M.B., Ch.B.Glas., Assistant Medical Officer, Perth District Asylum. (Proposed by Drs. Bruce, Easterbrook, and Campbell.)

(10) Charles J. Tisdall, M.B., Ch.B., Junior Assistant Physician, Crichton Royal Institution, Dumfries. (Proposed by Drs. Easterbrook, Chambers, and Campbell.)

Dr. G. M. ROBERTSON drew attention to the new reception hospital which the Edinburgh Parish Council had decided to erect for the reception and treatment of cases of incipient insanity, and he pointed out that the proposed site of the hospital was not conveniently placed to enable full advantage of the hospital to be taken for teaching purposes, and he moved "that a deputation of the Division be appointed, with power to add to their number, to approach the Local Government Board, the General Board of Lunacy, and the Edinburgh Parish Council, with a view to making the site of the proposed observation or reception hospital more accessible for the teaching of psychiatry, if the deputation considers that any good may result from their action." This was seconded by Dr. Carlyle Johnstone, and unanimously agreed to. It was decided that the deputation should consist of Sir Thomas Clouston, Drs. G. M. Robertson, McRae, and the Divisional Secretary, with power to add to their number if found expedient to do so.

Dr. FORD ROBERTSON read an exhaustive and instructive paper on "Vaccine Treatment in Asylums," which led to an interesting discussion, in which Sir THOMAS CLOUSTON, Drs. BRUCE, McRAE, and CHALMERS WATSON took part (see page 17).

The SECRETARY drew attention to the difficulty which now occurred in getting the members of the Division to attend the usual Dinner after the meeting, and in consequence of the small number attending these dinners, it had become difficult to get any of the hotels to arrange a special dinner for them. He suggested that the opinion of Members of the Division should be obtained as to whether the customary dinner after the meeting should cease to be held, seeing so few members took advantage of it. It was unanimously resolved that the Secretary should take steps to get the opinion of the members of the Division, and to act accordingly.

A vote of thanks to Sir Thomas Clouston for presiding concluded the business of the meeting.

Eight members of the Division afterwards dined together in the North British Station Hotel.

#### IRISH DIVISION.

THE AUTUMN MEETING of the Division was held on November 6th, 1913, at the Royal College of Physicians, Kildare Street, Dublin.

The following members were present: Drs. Drapes, Rainsford, Thomas Adrian Greene, Redington, Henry Eustace, Leeper (Hon. Sec.).

Letters of regret for unavoidable absence were read from Drs. Hetherington, O'Neill, Nolan.

Dr. DRAPES having been moved to the chair, the minutes of the previous meeting were read and confirmed.

The following letter was read from Mrs. Mazière Courtney:

"2, Andover Place, Cheltenham;

"May 7th, 1913.

"Dear Dr. Leeper,—I have received your letter enclosing the resolution passed at the last meeting of the Irish Division of the Medico-Psychological Association. Will you please convey to them my most sincere thanks for their sympathy and for the very kind terms of their resolution.

"I am, yours sincerely,

"KATHLEEN COURTNEY."

The meeting next proceeded to discuss the third item upon the agenda, *vis.*, "To consider the effects of the Government of Ireland Bill upon the existing legislation regarding superannuation of asylum officials." Regret was expressed that the meeting had not the valuable advice of Dr. Nolan, who was unavoidably absent, and a telegram was received from him, and read by the Hon. Secretary, in which he expressed the opinion "that ear-marking of full four-shilling grant for lunacy purposes is of primary importance, and suggest resolution accordingly."

Letter received in reply to communication addressed by Dr. Collins, by order of Council of Association, to the Chief Secretary of Ireland, was read and considered. After a lengthy discussion it was thought to be an inopportune time to draft a further resolution, and the Hon. Secretary was directed to bring the matter again before the next meeting of the Division, and the entire subject was deferred for fuller consideration to the Spring meeting.

It was decided to hold the Spring meeting of the Division at St. Patrick's Hospital, Dublin.

Dr. RAINSFORD next read his paper, "On a Case of Pellagra in an Insane Patient" (see p. 98).

The CHAIRMAN said the paper was of great interest owing to the rarity of the disease, and invited the discussion of the members.

Dr. EUSTACE complimented Dr. Rainsford upon the recognition of so rare a disease, and remarked upon the extent to which ideas in connection with the disease had undergone recent changes. He referred to the fact that, whilst the disease was generally supposed to be confined to South Europe, it now was very prevalent in Carolina and other parts of the United States, and did not appear to be due to eating maize, but to be caused by a fly infection; 10,000 to 50,000 cases were reported from the United States, where the disease seemed to be more frequently found in the spring months of the year, and to attack both old and young subjects.

Dr. GREENE remarked that many cases of skin eruption occurred in the aged and chronic inmates of asylums, and possibly the disease of pellagra had been frequently overlooked in large asylums where single cases like Dr. Rainsford's had occurred, and were possibly unrecognised. In discussing the causation he remarked that the occurrence of single cases would not strengthen his opinion as to the probable causation by flies, as, were the disease thus produced, it would be more epidemic in character.

Dr. REDINGTON discussed the possibility of the disease being caused by the "ultra violet" rays. Most of the cases recorded had been exposed for long periods to strong sunshine.

Dr. RAINSFORD replied, and stated that the consumption of badly cultivated maize, or immature maize, was the assignable cause in the case of many observers. Pigs were affected in Italy, and also a skin eruption had appeared on those animals where the disease had been observed in England. He considered that fly infection was the more probable cause.

The consideration of other business was then undertaken, and after some discussion Dr. RAINSFORD proposed and Dr. REDINGTON seconded a notice of motion for the Spring meeting—"That the attention of the members be drawn to the dearth of original papers contributed during the past year, with a view to discussing a remedy for this defect."

This terminated the proceedings.

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#### OBITUARY.

SIR JOHN BATTY TUKE, M.D.Edin., F.R.C.P.Edin., F.R.C.S.E., LL.D., D.Sc.

Sir John Batty Tuke was born at Staines, Surrey, on January 9th, 1835, and died in Edinburgh on October 13th, 1913. He spent his boyhood at Beverley, Yorkshire, and he had in many ways the characteristics of the Yorkshireman. He came to Edinburgh in his boyhood and received his school education at the Edinburgh Academy. He lived with his uncle, Dr. John Smith, one of the proprietors of Saughton Hall Private Asylum, during his school and university education. He studied in the University of Edinburgh, and took his degree in 1856. He went to New Zealand as medical officer to the 65th Regiment immediately after he passed, having married Lydia Jane Magee, a sister of Dr. Magee, who afterwards became Archbishop of York. When in New Zealand he acted as surgeon of the colonial troops, and served as senior medical officer in the Maori War until 1863. His experience of the Army left its stamp on him all his life.

Immediately after he returned to Edinburgh he was appointed one of the

assistant physicians of the Royal Edinburgh Asylum under Dr. Skae and served in that capacity for two years, when he was appointed medical superintendent of the newly built asylum for Fife and Kinross. There is no doubt that his Morningside experience and the traditions of that institution first stimulated him to do original work in the department of psychiatry in which he so greatly distinguished himself in future years. Being near a great medical school he came constantly in contact with the teachers and investigators who had made Edinburgh so famous as a medical centre. The late Prof. Rutherford and he did conjoint brain-work, while Prof. Goodsir and his assistant in the anatomy class and museum, John Stirling, taught him the new methods of staining and section-cutting which then revolutionised normal and morbid histology. After he went to Fife he continued to work strenuously in microscopic and pathological work, not neglecting the clinical side of his department. He published many papers in various medical journals, all of which contained original work and vigorous thinking. He returned to Edinburgh in 1873 to take up the work of his uncle and Dr. Lowe, his partner, at Saughton Hall. He very soon became a power in the Royal College of Physicians of Edinburgh, of which he was a Fellow. That institution possessed considerable funds whose chief scientific outlet was then its magnificent medical library. But Tuke developed and pushed the idea that the College should institute a laboratory, where its fellows and the young medical scientists of Edinburgh should have an opportunity of working free of cost and under the superintendence of a skilled superintendent. After the usual fight against conservative feeling this scheme was launched, and Prof. Sims Woodhead appointed its first superintendent. The work of this great laboratory from then until now, under Prof. Noel Paton, who succeeded Woodhead, and Prof. James Ritchie, who was tempted from Oxford to take its direction, has been epochal in the medical science of Edinburgh. A very large number of the men who now fill professorial chairs there, and are on the medical staff of the Royal Infirmary, have been workers in it.

He was twice Morison Lecturer to the College—once in 1874, and the second time in 1894. In due time he was sent by his College as its representative on the General Medical Council—a position he held for twenty-five years, being latterly the chairman of one of its important committees. He lectured on mental diseases in the Royal College's School of Medicine from the year 1874. In due time he was appointed President of his College, and held that position for three years, being knighted after Her late Majesty's Jubilee in 1898. After the death of Sir William Priestley in 1900, he was elected M.P. for the Universities of Edinburgh and St. Andrews, and he held that position for ten years, until his failing health compelled his retirement, to be succeeded by Sir Robert Findlay. Both Universities conferred on him the degree of LL.D., and the University of Dublin that of D.Sc. He held the office of President of the Neurological Society, was President of the Section of Psychology at the annual meeting of the British Medical Association in 1895, and three years later at the annual meeting in Edinburgh gave the address on Psychology. Early in his career in Edinburgh he helped to found the Pathological Club there, an institution with informal but fresh methods, which has been fertile in good results. He became a member of the Medico-Psychological Association in the year 1866, and did good work for the Association as its second Scottish Secretary for the years 1869-72.

Sir John Batty Tuke was a man of catholic tastes, fond of art and literature, having a large acquaintance among all classes of professional men in Edinburgh, where he was an outstanding figure. In appearance he was, when young, a strong man with a military touch in his bearing, genial to his friends, a strenuous opponent, fond of sport of various kinds—fishing, shooting, golfing—and enjoying convivial meetings. He was a man who allowed no liberties to be taken with him, was a trifle irritable at times, and always kept up the dignity of his profession. He was handicapped by a tendency to gout in the latter part of his life, and sometimes suffered severely from its effects.

It is right that Sir John Batty Tuke's contributions to psychiatry, so many of which appeared in the pages of the *Journal of Mental Science*, should be particularly referred to in this obituary notice. The first paper he wrote, so far as I have been able to ascertain, was "On the Statistics of Puerperal Insanity as observed in the Royal Edinburgh Asylum, Morningside," in the year 1865. It was based on 155 cases of that disease, which he described and analysed with great care. His



pathological and microscopic contributions to psychiatry were those which brought his name into especial notice, and is the work which will be most likely to endure. Dr. Ford Robertson, in the "Pathology of Mental Disease," specially and repeatedly refers to that work. He says, in regard to one part of it, that "There are to-day practically no new facts of importance to be added" to his work. He was the first to describe the course of pigmentary deposits in the vessels and cells of the cerebral cortex. He was the first also to describe the great importance of the intra-cranial lymphatic system as an element in the pathological process in some forms of insanity. He described a new appearance which he called "miliary sclerosis," which now is known by the name of "senile plaques," and certain other degenerations of the cerebral cells. He was one of the early observers of the clinical symptoms and pathological appearances in syphilitic arteritis, as also of the increased blood-pressure in general paralysis. He reported his cases with great care and accuracy when recording clinical work. In his Morison Lectures he described "The Insanity of Over-exertion of the Brain." He devised a new "pathological classification of insanity." He advocated a uniform system of recording *post-mortem* examinations in the insane, and he himself reported thirty cases on that system. He conjoined himself with the late Dr. Howden, of Montrose, in this work. He wrote the articles "Insanity" and "Hysteria" in the last edition of the *Encyclopædia Britannica*. He did not confine himself to pathological and clinical work, but also advocated strongly an extension of the "open-door" methods of treating patients in asylums, which had a very considerable effect in extending the ideas of the amount of freedom that might be given to many patients during their treatment with advantage to their happiness and recovery. He believed strongly in the results of a scientific study of insanity. In his address at the Edinburgh meeting of the British Medical Association he took as his subject, "The Modern Conception of the Ætiology of Insanity." He read at the Royal Society of Edinburgh a paper on the "Constitution of the Pia-mater," maintaining that the pia-arachnoid was one membrane, the arachnoid being simply the outer layer of the pia. This view has since been generally adopted. He contended that the vessels course between the two layers, instead of the older view that they ran in its inner layer.

A personal friend who knew him specially well gives the accompanying personal touches in an appreciative sketch in the *Edinburgh Medical Journal* for November, 1913: "He possessed a peculiarly subtle imagination and charm of manner which won him the friendship of men of the most various tastes and character. He was particularly happy in his relationship with younger men, in whose society he seemed to take special pleasure. Perhaps it was this association that kept his mind so alert and receptive of new ideas. Many of his friends, who have since risen to positions of distinction in their professions, have reason to remember with gratitude his encouragement and help in their early struggles with fortune. A little coterie who for many years assembled every spring as his guests at his bungalow at Gullane saw Tuke at his best. Here he was the genial, kind host, dispensing a simple but generous hospitality, making everyone feel thoroughly at home, and drawing out whatever was best and most interesting in each of his guests. He was the life of the party, the happiest of the crowd, stalking round the links, a cheroot constantly between his lips, and constantly followed by 'Dandie,' the faithful friend of many years. The memory of these delightful holidays will linger lovingly in the hearts of everyone who was privileged to participate in them."

Altogether Sir John Batty Tuke's original work and his thinking have influenced modern psychiatry, and his name will go down as one of those who gave an early impetus to the great advance which has taken place in our department of medicine during the last fifty years.

T. S. C.

#### PROFESSOR PAUL NÄCKE.

Dr. Paul Näcke, director of the asylum at Colditz, in Saxony, died suddenly on August 18th after more than thirty-three years of continuous work in alienism and unremitting literary activity. He was born in 1851, in St. Petersburg, the son of a German father and a French mother, and this mixed ancestry probably

counted for much in the determination of his varied and intense intellectual vigour, although the Teutonic heredity was clearly dominant. At the age of five the family came to Dresden, and his education was pursued here and afterwards at Leipzig, Würzburg and Paris. In 1880 he entered the asylum service of the kingdom of Saxony, in 1902 he became Superintendent of Hubertusburg, and in 1912 Director of Colditz. At the same time he travelled much and was an indefatigable reader; he was acquainted with seven languages and interested in the scientific and intellectual life of many countries (especially perhaps Italy, England, France and Spain). He was always eager to come into touch with fellow-workers in various lands whose work seemed to him of vital interest, discriminatingly generous in his appreciation of their researches, and anxious to welcome them at Hubertusburg. His natural sociability was, however, somewhat hampered by neurasthenia; one rare symptom which affected him, rumination, he fully described in the *Neurologisches Centralblatt* in 1893.

Näcke's first important investigation, a study of insanity and criminality in women, based on the ample material he had at hand at Hubertusburg, was published as a volume in 1894, *Verbrechen und Wahnsinn beim Weibe*. Herewith began Näcke's long warfare against Lombroso, conducted restlessly and unceasingly. His very legitimate criticisms of Lombroso, often made with considerable acerbity, sometimes failed to allow for Lombroso's value as a great seminal and stimulating force, although Näcke was just enough to recognise this fact, and, indeed, his own work conspicuously bore witness to it. Lombroso had some right on his side when he retorted on his opponent that if it were not for the Italian school Näcke's occupation would be gone. Notwithstanding the antagonism between them, the two men had points of resemblance in nervous temperament. They both had the same devouring and rather over-hasty passion for fresh intellectual conquests; and while Lombroso was too eager to be able to be accurate, Näcke was too restless to be able to work with the microscope; they even rivalled each other in the illegibility of their handwriting.

Näcke's activities were by no means confined to the destructive criticism of Lombroso. Much of his most characteristically elaborate, thorough, and richly learned work was in connection with general paralysis. The proposition he sought to maintain was that, beyond the unquestionable specific element, the general paralytic reveals a congenital morbid disposition, and is invalid *ab ovo*. The numerous, lengthy and systematic papers which Näcke published on this subject (more especially in the *Zeitschrift für Psychiatrie*, between 1898 and 1908), with their co-ordinated wealth of concentrated personal observation and wide-ranging familiarity with the literature of many lands, are highly interesting and impressive.

He also devoted much attention, especially during later years, to the various problems of sexual science. In this field, indeed, it can scarcely be said that the data at his disposal were large in amount. But his attitude towards the various difficult questions he took up—homosexuality (which he regarded as congenital and not morbid), the results of sexual abstinence, the diagnostic value of erotic dreams, the introduction of voluntary sterilisation on social grounds, etc.—may be described as, although sometimes advanced, generally temperate and circumspect.

It would not be easy to exhaust the list of the subjects in which Näcke was interested. They extended far beyond the limits of medicine to philosophy, history, ethnography, archæology, architecture, art and music (a bibliography of his chief papers, extending to 146 items, is printed in the *Psychiatrisch Neurologische Wochenschrift*, September 27th, 1913). Perhaps the best idea of his many-sided interests is gained from the notes and reviews which he contributed regularly to the *Archiv für Kriminalanthropologie* during at least the last ten years of his life.

Näcke's work and services were not unrecognised. He was the honorary or corresponding member of nearly a dozen learned societies in different countries, and his own State conferred upon him the honorary title of "Professor." It may be added that he was married, and leaves a widow and several children, one of whom, a daughter, has adopted her father's profession.

Paul Näcke is a fine and inspiring example of what may be achieved by a man who, possessing no great original gifts, devoted to an exacting specialty, and hampered by defective physical constitution, is yet firmly resolved to realise the best that is within him.

H. E.

## LONDON COUNTY COUNCIL (GENERAL POWERS) BILL.

*4 & 5 George V.—Session 1914.*

## PART VII.—PROVISIONS AS TO LUNACY AND OTHER ACTS.

44—As from the first day of April One thousand nine hundred and fifteen or such earlier date as the Council may fix (in this Part of this Act referred to as "the appointed day") all property invested in any Committee of the Council acting as or exercising the powers of a Visiting Committee under and for the purposes of the Lunacy Acts and all the powers rights privileges duties obligations and liabilities of such Committee shall be transferred to and vested in the Council and all the officers and servants of such Committee shall without prejudice to the rights of such officers and servants be transferred to and become officers and servants of the Council and the Council shall hold such property and may exercise all such powers rights and privileges and shall be subject to all such duties obligations and liabilities so far as applicable in like manner as if they were a Visiting Committee under the Lunacy Acts.

45—As from the appointed day all matters relating to the exercise by the Council of the powers transferred to them by virtue of this Part of this Act shall stand referred to the Committee for the Care of the Mentally Defective constituted by the Council under the Mental Deficiency Act 1913 and the Council before exercising any such powers shall unless in their opinion the matter is urgent receive and consider the report of the said Committee with respect to the matter in question. The Council may also delegate to the said Committee with or without any restrictions as they think fit any of the powers transferred as aforesaid and the said Committee may appoint such Sub-Committees and may delegate thereto such of the powers delegated to the said Committee under the provisions of this Part of this Act as the said Committee with the approval of the Council may think fit.

46—As from the appointed day the obligation under the Lunacy Act 1890 to appoint a Visiting Committee shall cease to apply with respect to the Council and references in the Lunacy Acts or any other Act to the members of the Visiting Committee shall be construed as references to the members of the Committee constituted by the Council under the Mental Deficiency Act 1913 as aforesaid and any proceedings which may under the Lunacy Acts be taken by the Clerk of the Visiting Committee may be taken by the Council.

47—On the application of the Council the Secretary of State may by order provide for such further repeal modification and adaptation of any of the provisions of the Lunacy Acts or any other Act as may appear to him to be necessary to give effect to the provisions of this Part of this Act.

48—(1) Every officer and servant transferred under this Part of this Act (in this Section referred to as an "existing officer") who held office at the appointed day and who by virtue of this Part of this Act becomes an officer or servant of the Council shall hold his office by the same tenure and upon the same terms and conditions as before the appointed day and if performing the same duties shall receive not less salary or remuneration and be entitled to not less pension or superannuation allowance or gratuity (if any) than he would have received or been entitled to if this Act had not been passed but if any existing officer is required to perform duties which are not analogous to or which are an unreasonable addition to those which he is required to perform at the appointed day he may relinquish his office and any existing officer who so relinquishes his office or whose office is abolished shall be entitled to compensation under this Part of this Act.

(2) Every existing officer who by virtue of this Section is entitled to compensation and every other existing officer who by virtue of this Part of this Act or of anything done in pursuance or consequence thereof shall suffer any pecuniary loss by abolition of office or diminution of salary or otherwise shall be entitled to have compensation paid to him by the Council and such compensation shall be determined pursuant to the provisions of Section 120 of the Local Government Act 1888 providing that in construing the said Section 120 for the purposes of this Section the Secretary of State shall be deemed to be substituted for the Treasury.

49—As from the appointed day all moneys required to be raised by the Council

by means of the county rate for the purposes of the Lunacy Acts or any other Act relating to the care or maintenance of lunatics or persons of unsound mind shall notwithstanding anything contained in any Act to the contrary be raised as moneys required for general county purposes within the meaning of the Local Government Act 1888.

Dyson & Co., Caxton House, Westminster, S.W., *Parliamentary Agents*.

Wyman & Sons, Ltd., Printers, Fetter Lane, E.C.

#### NOTICES BY THE REGISTRAR.

*Certificate in Psychological Medicine*.—The next examination for this Certificate will be held during the first week in July, 1914.

*Nursing Certificate*.—The next examinations will be held as follows:

Preliminary . . . . . May 4th, 1914.

Final . . . . . May 11th, 1914.

Lists of the successful candidates at the November, 1913, examinations will be published in the April number.

#### NOTICES OF MEETINGS.

*Quarterly Meetings*.—Thursday, February 19th, 1914, at Storthes Hall; Tuesday, May 19th, 1914.

*Annual Meeting*.—Tuesday, July 14th, 1914.

#### APPOINTMENTS.

Blandford, J. J., M.R.C.S., L.R.C.P.Lond., Medical Superintendent of Whalley Asylum, Lancashire.

Brown, R. Dods, M.D., Ch.B.Edin., F.R.C.P.Edin., Physician-Superintendent at James Murray's Royal Asylum, Perth.

Cole, Sydney J., M.A., M.D.Oxon., Medical Superintendent of the Wilts County Asylum, Devizes.

Gordon, J. L., M.D., Ch.B.Aberd., Acting Medical Superintendent at the Fountain Temporary Asylum.

Patrick, John, M.B., B.Ch., R.U.I., Resident Medical Superintendent of Tyrone and Fermanagh Asylum.

Rotherham, Arthur, M.B., B.C.Cantab., Commissioner under the Mental Deficiency Act, 1913.

Sherlock, E. B., M.D., B.Sc.Lond., D.P.H., Medical Superintendent of Darent Industrial Colony.





# THE JOURNAL OF MENTAL SCIENCE

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No. 249 [NEW SERIES  
No. 213.]

APRIL, 1914.

VOL. LX.

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## Part I.—Original Articles.

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*The Complement-Deviation in Cases of Manic-Depressive  
Insanity*<sup>(1)</sup>. By LEWIS C. BRUCE, M.D., F.R.C.P.E.,  
Physician Superintendent, Perth District Asylum, Murthly.

BEING personally satisfied by clinical observations that certain of the acute insanities are toxic in their ætiology, it occurred to me that it might be possible to demonstrate the presence of the toxæmia by means of the delicate test of complement-deviation. I argued that if a toxin existed in the blood, it would probably be excreted in the urine, and that at certain stages of the disease process a corresponding immune body would be found in the serum. In a series of observations carried out on these lines, I used urines as the antigen, and serum as the immune body.

During the past two years, I have examined the urine or the serum, often both, in every case of acute insanity admitted to Murthly Asylum, and—confining my remarks to cases of manic-depressive insanity—I found that when the serum of one case of manic-depressive insanity was mixed with the urine of another case in the proportion of '2 c.c. serum to '2 c.c. urine, the mixture frequently had the power of deviating from 3 to 4 M.H.D. of complement. This complement-deviating power was not present when the serum of a case of manic-depressive insanity was mixed with the urine of a sane healthy person,

LX.

12

nor when the serum of a sane healthy person was mixed with the urine of a case of manic-depressive insanity.

It was noticed, however, that there was a very marked variation in the complement-deviating power of both the urines and serums of the same cases of manic-depressive insanity at different stages of the disease. This might be due to the use of serums and urines of varying and unknown quality. Chart No. 1, however, shows the average complement-deviating power

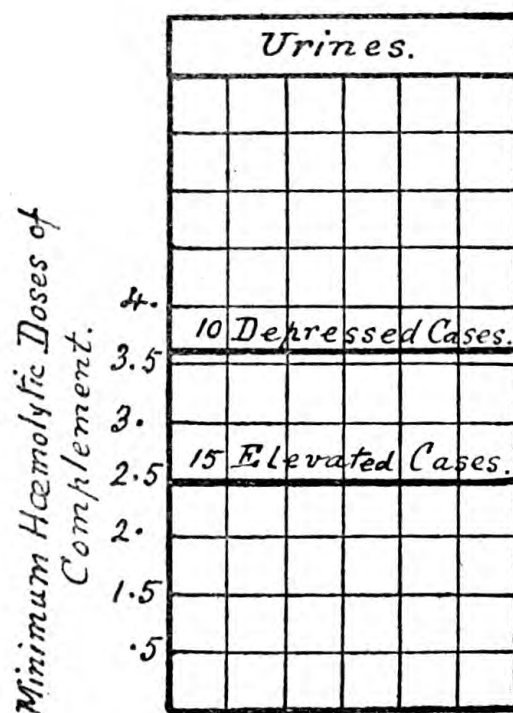


CHART 1.—The average deviation of complement by the urines of ten cases of depressed manic-depressive insanity and fifteen elevated cases.

of the urines of ten cases of manic-depressive insanity in the condition of depression, and of fifteen cases in the condition of elevation, all tested with the serum obtained from one patient suffering from manic-depressive elevation. The average complement-deviation of the ten depressed patients is 3.7 M.H.D., while that of the fifteen elevated cases is 2.5 M.H.D.

It is apparent from this observation that the urines of cases of depressed manic-depressive insanity have a greater complement-deviating power than the urines of cases in a state of elevation, and further, that the antigen, or complement-deviating

substance in the urine, is always more or less present in the various stages of the disease.

Conversely, when the serums of six cases of manic-depressive insanity in the state of elevation, and six cases suffering from depression, were tested against the urine obtained from another case of the disease in the stage of depression, it was found that the complement-deviating power of the serum of the six elevated cases averaged 3 M.H.D., while the serum of the

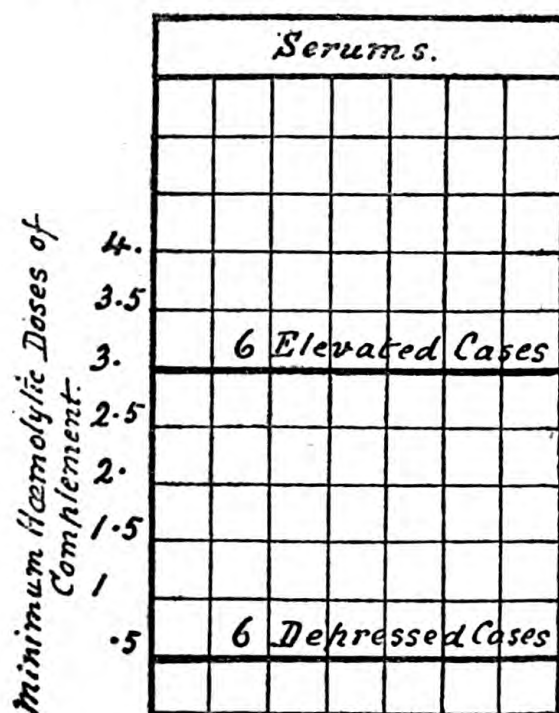


CHART 2.—The average deviation of complement by the serums of six cases of elevated manic-depressive insanity, and six depressed cases.

six depressed cases gave an average deviation of .5 M.H.D. (Chart No. 2).

This observation would show that the immune body, or complement-deviating substance, in the serum of cases of manic-depressive insanity is greater during the stage of elevation than during the period of depression.

As these observations were carried out on cases of manic-depressive insanity as a class, a further observation was made on individual cases at the various stages of the disease, and the technique employed was as follows: The serum of a case of manic-depressive insanity was tested to ascertain that it held



an appreciable quantity of immune body, and similarly the urine of another was tested to ascertain the presence of antigen. When it was proved that the serum contained immune body, and the urine the specific antigen, the serum and urine were stored in tubes, sterilised by heat at  $55^{\circ}$  C., and then hermetically sealed to prevent evaporation. Such tested and stored

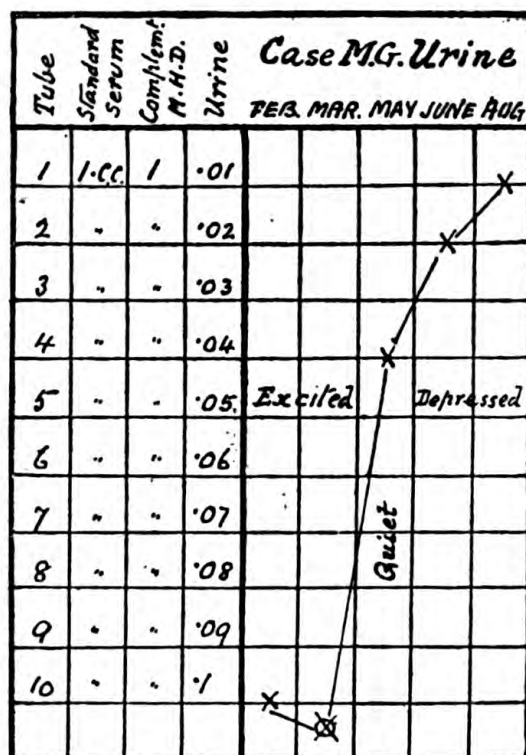


CHART 3.—Case M. G.—, female, æt. 60. The patient had acute attacks, with long intervals of sanity. The chart shows that in February and March when the patient was acutely excited it took .1 c.c. of her urine mixed with .1 c.c. of the standard serum to deviate 1 M.H.D. of complement. She passed into a period of quiescence in May, when .04 c.c. of her urine mixed with .1 c.c. of the standard serum deviated 1 M.H.D. of complement. She became depressed in June, and was still depressed in August. The complement-deviating substance in the urine was increased during this stage, as it took only .02 c.c. of her urine in June, and .01 c.c. of her urine in August to deviate 1 M.H.D.

serum was designated standard immune body, and such urine as standard antigen.

Six cases of known manic-depressive insanity were selected, and their serum and urine was tested at various periods of their disease by means of the standard immune body, and the standard antigen. When the serum of any case was to be tested, a series of tubes numbered from 1 to 10 were taken, and in each

was placed .1 c.c. of the standard urine. The inactivated serum of the patient to be tested was added to the tubes as follows: to No. 1 tube, .01 c.c.; to No. 2, .02 c.c.; to No. 3, .03 c.c., and so on. To each tube was then added 1 M.H.D. of complement. The M. H. D. in this observation was calculated as that quantity of fresh rabbit-serum which would completely

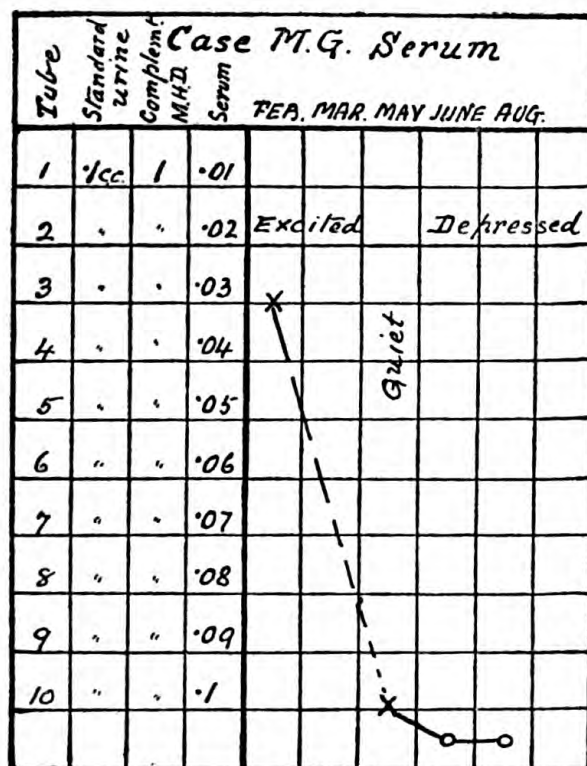


CHART 4.—Case M. G.— Patient whose urine deviation is shown in Chart 3. When excited in February, .03 c.c. of her serum when mixed with .1 c.c. of the standard urine deviated 1 M.H.D. of complement. In March, she would not permit me to take blood for observation. In May, during a period of quiescence, the complement-deviating substance in the serum was diminished, as it took .1 c.c. of her serum mixed with .1 c.c. of the standard urine to deviate 1 M.H.D. of complement. During June and August, when depressed, no complement was deviated by a mixture of .1 c.c. of her serum and .1 c.c. of standard urine.

hæmolyse .25 c.c. of a 1 per cent. suspension of red blood-cells with an appropriate dose of its specific hæmolytic serum.

The tubes were incubated for two hours at 37° C., and then to each tube was added .25 c.c. of the 1 per cent. suspension of red blood-cell emulsion, together with twice the amount of hæmolytic serum used to determine the M.H.D. of complement. The tubes were further incubated for two hours, and left at room

temperature for twelve hours. The slightest trace of hæmolysis was recorded as a negative result.

When the urine of a patient was to be tested, tubes to the number of ten had each placed in them '1 c.c. standard immune body, and then from a twenty-four hours' collection of the urine to be tested '01 c.c. was added to tube No. 1, '02 c.c. to tube No. 2, and so on, and to each tube was added 1 M.H.D. of

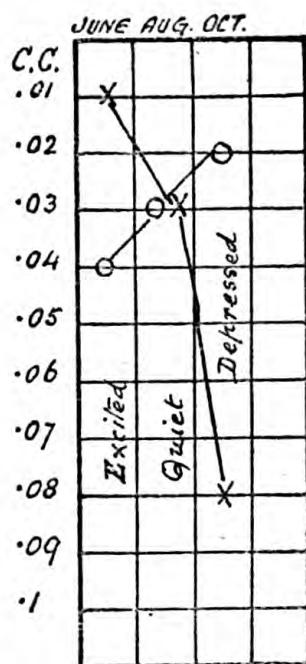


CHART 5.—Case A. A—, male, æt. 45. He suffered from acute attacks, with long intervals of sanity. When admitted in June he was excited; '01 c.c. of his serum mixed with '1 c.c. of standard urine deviated 1 M.H.D. of complement, and '04 c.c. of his urine when mixed with '1 c.c. standard serum deviated 1 M.H.D. of complement. He continued in the state of excitement during July, but during August he became quieter, when it was found that it took '03 c.c. of his serum mixed with '1 c.c. standard urine to deviate 1 M.H.D. On the other hand, the complement-deviating power of his urine had increased as it now took only '03 c.c. of urine + '1 c.c. of standard serum to deviate 1 M.H.D. During October he passed into mild depression; it now took '08 c.c. of his serum + '1 c.c. of standard urine to deviate 1 M.H.D. of complement, while the complement-deviating substance in his urine had still further increased as so small a quantity as '02 c.c. of his urine when mixed with '1 c.c. standard serum deviated 1 M.H.D. of complement. x = Serum, o = Urine.

complement. The remainder of the technique was as described above.

Control observations were made in each case of '1 c.c. of the standard immune body, '1 c.c. of the standard antigen, '1 c.c.

of the urine to be tested, and '1 c.c. of the serum to be tested. In no case did any of these control tubes deviate one full dose of complement.

The results of this series of observations are shown in Charts Nos. 3, 4, 5, and 6. It was found that during the elevated

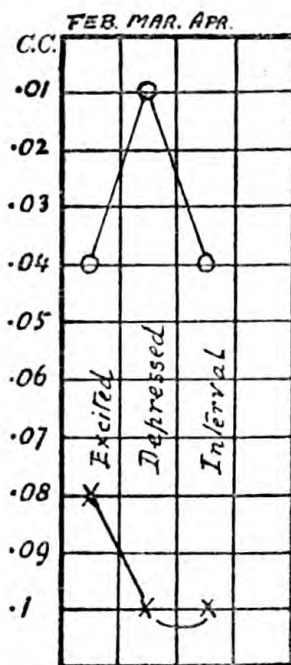


CHART 6.—Case A. L., female, æt. 50. She suffered from frequent attacks of varying duration with short intervals of quiet which could hardly be called sanity. In February, during an attack of excitement, it took '08 c.c. of her serum when mixed with '1 c.c. standard urine to deviate 1 M.H.D. of complement, and '04 c.c. of her urine mixed with '1 c.c. standard serum to deviate 1 M.H.D. of complement. In March, she became depressed, when it took '1 c.c. of her serum mixed with '1 c.c. standard urine to deviate 1 M.H.D. of complement, and '01 c.c. of her urine + '1 c.c. standard serum to deviate 1 M.H.D. During April, she had a quiet interval, when it was found that her serum had not altered in its complement-deviating power, but that the complement-deviating of the urine was diminished, as it now took '04 c.c. of her urine + '1 c.c. of standard serum to deviate 1 M.H.D. This patient had such frequent attacks that it was possible to repeat the observations several times, and in all the observations made the complement-deviating power of serum and urine during each attack followed very closely the variations shown in this chart. The low complement-deviating power of the serum throughout the attack is characteristic of the chronic type of the disease, and is in marked contrast to the high deviating power of the serum of more acute cases whose intervals of sanity are marked and prolonged. x = Serum, o = Urine.

period of the disease the complement-deviating substance in the serum was present in considerable amount, but that as the excitement passed off and depression set in, the immune body in the serum became markedly less, so much so that sometimes



no complement was deviated by so large a quantity of serum as '1 c.c. + '1 c.c. standard antigen. On the other hand, the complement-deviating substance in the urine of these patients was extremely scanty during the period of excitement, but became markedly increased during the periods of depression.

The test is not of diagnostic value, because I have found that the urines and serums of cases of acute insanity other than manic-depressive insanity will deviate up to 2 M.H.D. of complement with the urines and serums of cases of undoubted manic-depressive disease, but the results I have recorded are of interest, as they suggest a possible explanation of the varying mental states in the disease known as manic-depressive.

The suggestion is this, that during the excited period of the disease the defences of the body, in the form of immune body in the serum, are sufficient to neutralise to some extent the action of the toxæmia which causes the disease, but whenever the defensive power becomes exhausted, the toxin overwhelms and paralyses the nerve-tissues, so that the outward manifestation is depression, and, in some cases, even stupor.

(<sup>1</sup>) A paper read at the International Congress of Medicine, 1913.

*Further Observations on the Influence of Toxins on the Central Nervous System* (<sup>1</sup>). By D. ORR, M.D., and R. G. ROWS, M.D.

FOR some years, we have been engaged in an investigation into the mode of action of toxins upon the central nervous system, and up to the present time have devoted our attention exclusively to the question of the upward passage of bacterial poisons along the sheaths of peripheral nerves to the spinal cord and brain. Experiment has shown us that toxins readily travel upwards in the perineural lymphatics, in which they induce an inflammation whose phenomena vary with the intensity of the irritant; and that this is continued without interruption to the central nervous system, granted that the toxins gain that level. Continuity of extension is, therefore, an important feature of lymphogenous inflammation, and is as constant in the central as in the peripheral nervous system,

Lymphogenous inflammation is characterised by certain definite phenomena:—(1) The reaction of the cells of the fixed connective tissues; (2) the proliferation of the cells of the adventitial sheath of the veins and capillaries; (3) the appearance of scavenger cells within the cord where the myelin is disintegrated; (4) nerve-cell degeneration and neuronophage phenomena. Naturally the histological character of the inflammatory products varies with the potency of the exciting agent. The proliferation of the adventitial cells is worthy of special notice, as it forms a picture identical with that of the periarteritis found in general paralysis of the insane and some other conditions.

A study of experimental lymphogenous infection of nerves has enabled us to form two important deductions: (1) *That the lymph-path of nerves is an important mechanism of brain and cord infection*; (2) *that in all probability general paralysis and tabes dorsalis are lymphogenous infections*. We have, in previous papers, given our reasons for adopting this view. But there is another mode of infection of the central nervous system, and that is by the blood-stream, and many data go to show that over and above the deleterious influence on nerve-tissue of organisms and toxins, we cannot lose sight of the effect of the products of altered metabolism, and the influence of hyper- or hypo- secretion of the ductless glands.

In the present series of experiments we have commenced with a study of the effect in the spinal cord of a bacterial intoxication, and chose the abdominal cavity as the site of experiment for three reasons: (1) This site is the most suitable for an experiment in which one wishes to exclude infection of the lymph system of the spinal nerves; (2) to reproduce as closely as possible a gastro-intestinal intoxication and observe the effects upon the spinal cord; (3) to ascertain in how far such toxi-infection affected the sympathetic ganglion chain. It appeared necessary to determine this point, as infection of the abdominal sympathetic, and its functional disturbance, presumably should, by reaction upon the vascular system, be an important factor in the mechanism of production and localisation of spinal cord lesions.

The method of inducing a toxi-infection has been uniform throughout all our experimental work. In this instance the celloidin capsules containing a broth culture of the *Staphylo-*

*coccus pyogenes aureus* were placed in various parts of the abdomen, where they became attached by an adhesive exudation to various organs, *viz.*, the mesentery, kidney, bladder, and lower border of the stomach. The number of capsules varied from two to six, and the animals were allowed to live for from three to six weeks. Ten rabbits were used and one dog.

At *post-mortem* examination the capsules were found surrounded by an accumulation of inflammatory cells, and the vessels of the mesentery, stomach, small and large intestines were much congested. The inflammatory reaction extended from the neighbourhood of the capsules a considerable distance along the mesentery, and there was abundant evidence of reaction in connection with the sympathetic ganglia. Some of these were surrounded by masses of degenerate polymorphonuclear cells, by cells of the lymphocyte type, and fibroblasts; the vessels passing into the ganglion substance showed proliferative changes in the adventitial sheath. Within the ganglia there was chromatolysis of the nerve-cells. Much of the chromophile material had disappeared from the centre of the cell, and the nucleus was displaced to the periphery.

*Spinal cord.*—The spinal cords were fixed in formalin and bichromate of potassium, and pieces from all regions were cut in longitudinal and transverse section. No evidence of lymphogenous invasion was found in the sheath of the spinal ganglia, the perineurium of the spinal roots, or in either the dura mater or pia arachnoid. The posterior spinal root ganglion cells were normal, but their capsular cells showed a slight degree of proliferative change.

*Glia.*—Within the cord the picture presented a remarkable difference, and one was at once struck by the proliferation of the glial elements. The proliferation affected both grey and white matter, but seemed more pronounced in the outer layers of the latter. The hypertrophied cells were of the amœboid type, and frequently formed a row of elements lying end to end. No karyokinetic figures were seen. Many of these amœboid neuroglia cells clustered thickly round the veins and capillaries of the white matter, and frequently the cell-body was closely applied to the adventitial sheath, or attached to it by branching processes. It is noteworthy that in some of the experiments a high degree of glial change was present round the vessels, while the signs of morbid change in the adventitia



FIG. 1.—From the prevertebral sympathetic chain of rabbit. Toluidin blue. 1, inflammatory reaction round ganglion; 2, nerve-cells showing chromatolysis.



FIG. 2.—Spinal cord of rabbit. Note the small area of sclerosis in the white matter. Toluidin blue.

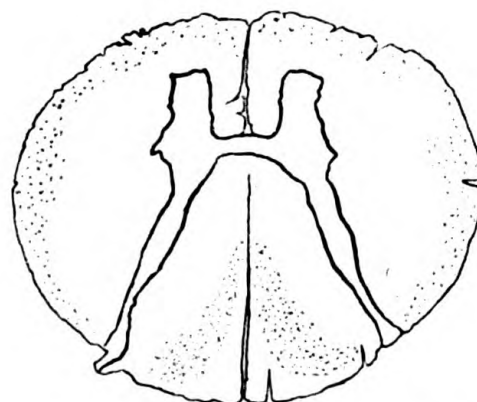


FIG. 4.—Spinal cord of rabbit. To show the distribution of the myelin degeneration. Donaggio's method. Upper dorsal.

To illustrate paper by DRS. ORR and ROWS.





and intima consisted in a slight degree of deformity of the nuclei. In this we find a sharp contrast to lymphogenous inflammation where adventitial proliferation is the rule.

*Sclerotic foci.*—In addition to this generalised neuroglia reaction, there were small scattered sclerotic foci, consisting of glial elements in the resting stage following proliferation. Their nuclei were smaller than normal, filled with chromatic substance, and their cell-bodies and processes massed together to form a syncytium. They occurred most frequently in the neighbourhood of the cord margin, and at times were definitely related to dilated vessels and hæmorrhages.

*Lymphocytes.*—In some of the experiments the presence of numbers of cells of the lymphocyte type was noted in both white and grey matter.

*Nerve-cells.*—The nerve-cells showed early chromatolysis. In some the nucleus was rather diffusely stained, an appearance suggestive of the initial stage of homogeneous atrophy, and the chromophile elements in the cell centre had an increased affinity for the stain, while their edges were not so sharply outlined as in the normal. In other cells the elements at the edge of the cell body were disintegrated.

*Lymphocytes and glia in relation to nerve-cells.*—There were many cells of the lymphocyte type scattered amongst the nerve-cells, and they frequently lay in close proximity to them, or formed isolated clusters of six or seven elements. Many swollen neuroglia nuclei were found round the margin of the nerve-cells.

*Myelin.*—Portions from the cervical, dorsal, and lumbar regions of the cord were prepared for demonstration of the alterations in the myelin sheath. The methods employed were those of Marchi, Wolters, and Donaggio, and all gave positive results. As the latter demonstrates early primary change in the medullary sheath, we found it the most trustworthy in mapping out the degenerated areas in the cord. The striking feature of the medullated fibre lesions was their non-systemic character. The two areas involved were the cord periphery, and the posterior columns. In the cervical and lumbar regions the whole cord periphery was affected, leaving the pyramidal tracts and antero-lateral basis bundles free. In the dorsal cord this marginal degeneration did not involve the posterior columns, being limited to the anterior and lateral parts.

The degeneration of the posterior columns varied from region to region. In the lumbar cord it formed a small triangle round the hinder end of the postero-median septum, with its base towards the cord margin. Higher up, in the dorsal cord, the degenerated fibres formed a V, whose apex reached the middle of the septum, while its limbs diverged backwards towards the cord margin, leaving the area round the posterior third of the septum practically free from degenerated fibres. In the cervical cord the degenerated fibres were more numerous than in the lower regions, and formed a narrow column situated slightly external to each side of the median septum, and running backwards to join the marginal degeneration. The medullated fibre lesions were therefore maximal in the cervical, and minimal in the lumbar region. The root-entry zones throughout the cord were free from degeneration.

Wolter's modification of Weigert's hæmatoxylin method demonstrates the absence of sclerosis in any of the tracts of the cord. By this method, however, the medullated sheaths in the external portions of the cord were irregular in outline, swollen, and in longitudinal section especially they showed a considerable degree of fragmentation—appearances resembling those found in the cord œdema of cancer cachexia, and pernicious anæmia. By Marchi's osmic acid method, some fibres scattered throughout all regions of the cord gave a positive reaction. In the vessel of the postero-median septum the adventitial sheath was seen sometimes to contain a considerable quantity of degenerated myelin, which had evidently been carried there by the lymph-current.

*Vessels.*—The changes in the vessels varied very considerably in degree, and were much more evident in those experiments in which four or six capsules were introduced into the abdominal cavity. In four experiments the vessel changes were very slight, and affected the veins and capillaries. In these the internal nuclei were clear and not proliferated, but many were somewhat distorted. There was no change in the adventitial nuclei beyond an increased affinity for toluidin blue in some instances. There were a few cells of the lymphocyte type in the adventitial lymph-spaces. In the remainder of the experiments, those in which a higher degree of toxicity was induced, the changes in the vessels were the most prominent morbid phenomenon in the cord. All the vessels, arterioles,

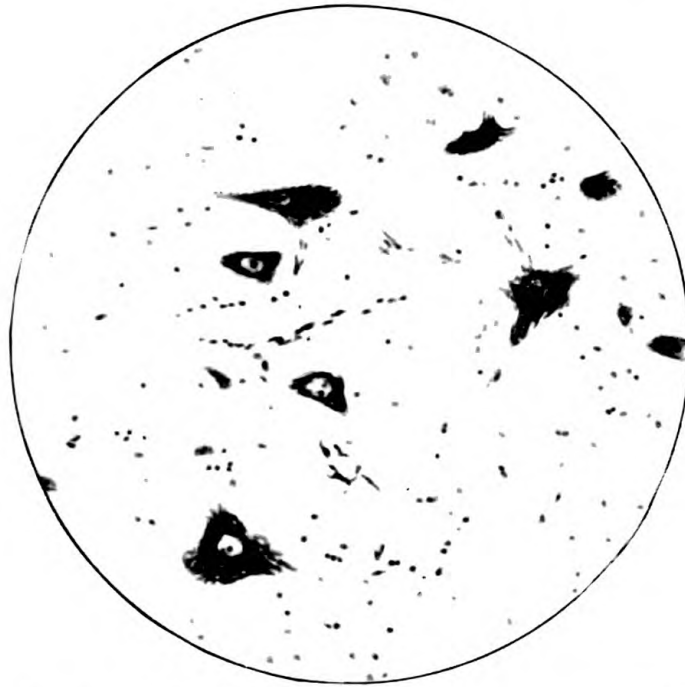


FIG. 3.—Spinal cord of rabbit. To show the hyperchromatic condition of the chromophile elements round the nucleus. Toluidin blue.



FIG. 5.—Spinal cord of rabbit. Venule in postero-median septum. Marchi method. Note the degenerated myelin in the adventitial spaces.

To illustrate paper by Drs. ORR and ROWS.





veins, and capillaries in both grey and white matter showed hyaline degeneration of their walls, and a large proportion contained hyaline thrombi—partial or complete. Where the thrombotic process was incomplete, the hyaline material lay along the vessel-wall as a thick band connected by trabeculæ with a very definite hyaline network in the lumen. There were many vacuoles in the thrombi, and practically no disturbance of the intimal or adventitial nuclei. Appearances almost identical with the above hyaline thrombi have been seen by ourselves and by Zuveri in "senile dementia," by Campbell in "general paralysis of the insane," and by Alzheimer in "general paralysis of the insane and epilepsy."

If we review very briefly the changes which we have just described, we find: (1) That the most highly developed structures, the nerve-cells, suffer least of all; (2) that there is primary degeneration of the myelin sheath round the cord margin, and along the postero-median septum; (3) that the myelin degeneration is greatest in the upper part of the cord; (4) there is œdema of the cord; (5) the perivascular neuroglia is actively proliferating; (6) the vessels are dilated and congested, are hyaline, and contain thrombi of the same nature. The appearances in these hæmatogenous lesions are obviously characterised for the most part by *degenerative changes*, and differ very widely from those found in lymphogenous infections, where the morbid phenomena are of an *inflammatory type*, and all the fixed tissues are in a state of active proliferation. In lymphogenous lesions, therefore, the inflammatory phenomena reach their maximum; in hæmatogenous intoxications the inflammatory reaction is reduced to the minimum.

Having given a short account of these hæmatogenous lesions, we have yet to discuss their mechanism of production. The simplest explanation is that of "general intoxication," but we gravely doubt if that explanation has any support from the evidence before us. It would appear that there must be another factor at work if we consider the curious distribution of the myelin degeneration alone. This occurs round the cord margin, and on either side of the postero-median septum, and is accompanied by œdema in the outer parts of the cord. It might be advanced that possibly these regions contain fibres of weaker resistive power than others, but this suggestion has no foundation in fact. The explanation of this peculiar distribu-

tion of the degeneration is not to be found in such vague assumptions.

Lesions of practically the same distribution are found in the human subject in hæmatogenous intoxications. For example, in cancer cachexia, pernicious anæmia, Addison's disease, etc., we again find non-systemic lesions affecting the areas above mentioned, associated with œdema. The grey matter so richly supplied by the anterior spinal artery often shows no change whatsoever; Goll's tract in the cervical enlargement is attacked in its middle third, leaving the long lumbo-sacral fibres, so far away from their trophic centre, untouched; between the lesions in the cervical, dorsal, and lumbar cord there are great differences not to be accounted for by any focal lesion. How does the general intoxication theory explain this? The lesions round the cord margin and postero-median septum are in the area supplied by the pial vessels. Were a general intoxication *per se* the explanation, why should the regions supplied by the anterior spinal arteries escape? We feel that there must be another factor besides intoxication which determines the localisation of the degenerations, and certain indications point to the sympathetic nervous system.

We have found in our experiments definite evidence of involvement of this mechanism. There was inflammation around the ganglia, proliferative changes in the adventitia of their vessels, and chromatolysis of the nerve-cells. Disturbed sympathetic influence, therefore, cannot be excluded. And when we find cord lesions of almost similar distribution in abdominal cancer, and in degeneration of the suprarenal capsules—two types of disease in which sympathetic reflex action must be considerably disturbed—we are strengthened in that conclusion.

In the vascular system of the cord, too, there is evidence of disturbance of sympathetic action; in the dilatation, hæmorrhages with sclerotic foci, and in the hyaline thrombosis—all which point to stasis. It might be asked, however, whether this stasis was produced by a toxin acting upon the sympathetic mechanism in the prevertebral chain, or whether the direct action of a toxin within the circulation could by itself be sufficient to induce vasomotor paralysis? In view of the histological changes this latter suggestion seems highly improbable, as to judge from the relative integrity of the nerve-cells, and the

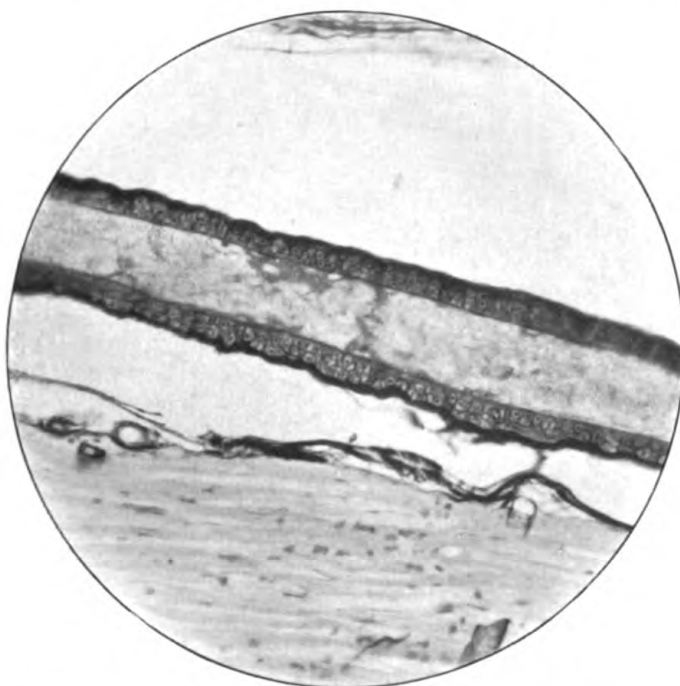


FIG. 6.—Spinal cord of rabbit. Partial hyaline thrombosis. Note the hyaline bridge across the lumen of the arteriole. Van Gieson's method.

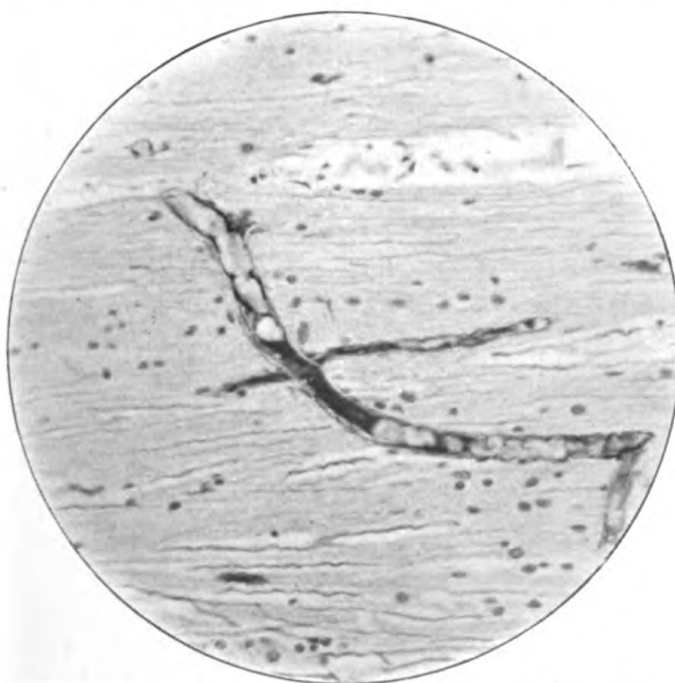


FIG. 7.—Spinal cord of rabbit. Hyaline thrombosis of a venule in the white matter. Van Gieson's method.

To illustrate paper by Drs. ORR and ROWS.





minimal reaction of the vessel endothelium, the toxicity of the blood-stream must have been very mild ; on the other hand, to ascribe the vascular disturbance entirely to direct action *via* the sympathetic ganglia would be equally erroneous, as some of the toxin from the capsules must have gained the general circulation. It would be more correct to say that both factors come into play. The disturbance of the sympathetic influence upon the cord vessels might be held responsible for a dilatation and increased permeability of their walls, thus facilitating the passage of toxins into the surrounding tissues. The proliferative change in the neuroglia round the vessels is evidence of this. But it is conceivable that as time goes on the dilatation and increased permeability would give place to a permanent paresis of the vessel-wall, and to slowing of the blood-current, the most favourable circumstances through which a mild toxicity of the blood could exercise a deleterious action upon the vessel-walls and nutrition of the nervous tissues generally.

In putting forward the above explanation of the genesis of the lesions found in our experiments, we would state that this communication is a preliminary one, and that at present we are only in a position to suggest a line for future investigation. We feel that the term "general intoxication" expresses inadequately the pathology of the lesions in question, and as we know the sympathetic prevertebral chain sends fibres to the vessels of the cord, its influence must be taken into account in all intoxications which are capable of disturbing it. Owing to its being a highly complicated organ of reflexes, one would anticipate that its involvement would produce lesions of an irregular or disseminated nature.

Whether we are right or not in attributing importance to the sympathetic factor must be left to further experiment ; we consider, however, that it cannot be ruled out of court at present.

We are indebted to Dr. Stephenson, of Prestwich, for the preparation of the photographs, and to Prof. Boycott, of Manchester, for his permission to conduct the experiments in his laboratory.

(1) Read before the Royal Society of Medicine, Section of Psychiatry, January 27th, 1914.

*The Importance of Disturbances of the Personality in Mental Disorders*<sup>(1)</sup>. By R. G. ROWS, M.D.

IT is interesting at the present time to notice that disorders of the mind are being considered from a broader point of view. No longer is it reckoned sufficient to enumerate the psychic symptoms and to label the case accordingly. In the scientific journals it is not unusual to find the statement that a certain case does not fit into any division of our present-day classification. It is recognised that to describe a case as an atypical example of a disease is equivalent to saying that some factor has escaped our notice, or is one we cannot explain; that ætiology, from the psychogenic as well as the pathogenic point of view, must be considered, and that bodily and nervous symptoms may be as much a part of the illness as are the psychic; in fact, these last are often merely a symbol expressing some change in the function of an organ outside the brain.

It is with the hope of contributing something to this work that I have written this paper. In it I shall make use of two cases to which I have given some attention during the past eighteen months.

CASE 1.—The patient was admitted in June, 1911. She had had a mental breakdown ten months previously, and had been for some months in a workhouse. She returned to her home, but states positively that she had not recovered. From her father we learn that signs of the breakdown were noticed first in September, 1910. A favourite sister had died in the previous July. She was much run down with nursing the sister. She is rather diminutive in size—4 ft. 9 in. in height—but is fairly well proportioned. No physical abnormalities can be detected. Her memory is well preserved. During her life she had been bright generally, but during these ten months, since the illness began, there had been fits of depression, worse at the menstrual periods. The first signs were a desire to be alone, hysterical outbursts, delusions of a religious and supernatural character, with the belief that she possessed extraordinary powers; finally, she refused to eat or speak. Another phase during this ten months was a destructiveness; she was indifferent to personal appearance; she breathed on and pressed on all objects within reach. During her life she had been a great reader, and was very superstitious. She rarely went out for pleasure. Years ago she stated that should anything happen to any of the family she was sure she would go mad; now she says she is playing a part.

The patient has given a very interesting account of her mental breakdown. During the illness her sister once asked her: "Do you think there is anything in religion?" Patient answered, "No." "After she

had died there was a great cleaning of the house, and I came across some old books on religion. I opened one quite haphazard, and read: 'There can be no salvation unless you believe.' I suppose I prayed. I was thinking of J.'s death when I looked in the book. I believed in fairies as much as in God. Fairies or God, there had to be something. I was not sure of either; I prayed to both. After my sister died I used to look for her in everything bright; I wondered if J. could be there, just like a fairy tale. I used to kneel at my bedside a great deal. I told you I was kneeling at the bedside when God came to me. Afterwards I believed there was a God." In reply to the question, "Did you see anything?" the patient said, "Only once, but it was seeing through feeling." A little later God appeared to the patient in human form. The patient said: "I was asleep when the Holy Spirit came; he awakened me; everything was intense; I said I did not want religion in this violent way. I wriggled; what entered me I do not know; the power was intense, terrific; the sensation was throughout the body, very violent, and made me wriggle." The patient proceeded: "I felt different all the time after God came to me. I became J. actually. I felt like J., young and childish, younger and rounder. After this my condition was that I felt I had no free will; I was directed by something inwardly, quite natural, not myself. For a day or two I had a doubt whether I was mad or not; then the influence became ordinary and natural, without any doubt."

August 9th, 1912: The patient said: I was possessed by a hypnotised force, stronger than myself. I am still and always. I am guided in every detail of my life. I do many things which I would not do of myself of my own initiative, and I do not do others.

January 2nd, 1913: The patient informed me that after leaving the workhouse she went to B. with her mother. While there she had a vision, in which God appeared to her, and gave her an apple. She said: "I did not hear any speaking, only felt it. While I was ill my people spoke to me, but I could not answer them."

January 9th: When I awoke this morning I said, "She is dead." I was detached from myself, looking at myself, and wishing I were dead. I often had a detached feeling, as though I was separate and looking at myself.

January 22nd: There has been a big change in me. The old life went on year after year, and seemed as though it would go on for ever. The difference, the change makes me feel readier to stay here. I have gone rounder since I came here; it is a sort of spiritual difference, something from inside; but spiritual is not the word, as though J. would have felt like this if she had been inside me.

February 13th: Later I was awake night after night, after the coming of the Holy Ghost, and I began to do strange things. All the things followed a symbolism.

February 23rd: Two or three times the words "She is dead" passed through my mind. Following that, "She is not dead, she is married," was heard.

February 10th: Why was I upset so much at J.'s death? If you follow my life it seems impossible. I used to take things calmly. I was the practical one of the family. I cannot understand going over.



February 13th : I thought once I saw J. I had been wishing to see her, and an atmosphere came into the room ; but I knew I could create an atmosphere by wishing ; a flash came, a flash of white, as though someone besides myself was in the room ; there were no words ; it lasted a minute or two. I was kneeling by my bed.

February 23rd : I think I feel more ordinary this week.

March 6th : I had a very disagreeable morning—pleasant at the last, but horrid at first. I never saw colours so strongly or so persistently : red frequent at first, blues and greens intermixed, but later a restful blue with a greeny-yellow edge ; at the time the colours were jarring, more if I looked at the window with my eyes closed ; if I looked across the room it was smoky. When at B. I saw colours. I touched nothing that was not big and immense. I noticed every change in the atmosphere and sea. I had the most glorious dreams at night, fitting what I had seen during the day. I was not myself while at B., I was crazy. I feel more ordinary as time goes on. I could not have got all that appreciation if I had been myself.

March 25th : This morning in church, dusting, I was in the gallery, and I had a slim idea of seeing myself in mid-air. I had been slightly dizzy earlier. I was all right when I got to the other gallery. The dizzy feeling has come several times. I have not the feeling of my head going round. I was sitting on the bath talking to M. I did not take notice of what she was saying because of a dizziness, a feeling of swaying backwards and forwards. Then, a long time ago, I remember lying down and feeling I should be justified in doing anything to relieve the tension. It was a strange feeling, just as though something passed through me from head to foot ; then I started swaying up and down ; objects around were not moving. The whole thing was like a flash. I know that when I turned away I felt the same fascination as I did with the river. [This referred to the attraction the patient felt when she saw a river while walking with her brother, sometime in the end of 1912. The river said "Come." She states she never had the feeling before she came here.]

April 2nd : I was wondering ; it is quite a common feeling when I am very happy to wish I could die while so happy. I was a bit fatigued one day this week, and I hesitated—should I comb my hair or rest on the bed. I got on to the bed with my hair down, and at once I went into a dream state. If I let down my hair and lie down, I pass into a detached state at once—it is beautiful while you are in it. I have sent myself into a dream state many times by playing with my hair. [In the acute stage the patient combed her hair for hours—one side stayed tidy, the other would get into a tangle again. This symbolised heaven and earth.] Patient referred to the flash seen in the church. I was not myself in that gallery at all. I felt different in the opposite gallery—the feelings were pleasant, the dizziness was most intense just before the flash. If you want the cause you must bring the whole affair down to the same thing. M. was indignant at a doctor who said women became suffragettes because of a sort of madness—because they were not mothers. A woman is made to be responsible at any rate for the kiddies, and if you take that from them you ought to give them something else. You would find a satisfactory allegory at the bottom of my

visions—love and marriage. The colours worked themselves up into blocks, and then into a carpet; in an old dream-book at home it was stated that to dream of carpets was to have many children.

April 18th: Last night I had a headache; as I lay on the pillow there was a second head by my own. I was awake. I had been reading about a two-headed thing during the day. In the old night dream I used to see a form, not to recognise it, but I knew it represented a special person. Recently E. came suddenly, and I felt my face take the form of her face. Another time one part of my face changed to hers; my mouth grew longer and larger. I have had moments when I could imagine I felt myself changing, but I seemed to have conscious thought all the time.

April 20th: When in Ward X, after getting over C.'s death [a favourite brother], I thought, Will his personality get into me? My sister and brother and myself. What an awful condition! I don't believe in re-incarnation, but what was it so suddenly to feel, mentally and physically, J. the morning after the wriggling?

May 8th: The lightness you feel when you are crazy is a very real feeling. When I was at home I stood on the bed, nude; I seemed to be a half a yard only from the ceiling: I had not grown, but I felt I should not be surprised if I changed into a spirit and floated out through the window. At that time going out to walk I felt funny inside the clothes, and the clothes were dreadfully heavy. When I have spasms of singing, or play with my hair, I have a sort of detachment from my ordinary self and from all around me. One thing when I was bad was that I kept on scraping my limbs and body. I scraped off most of the flesh, and saw it lying in a heap by the bed. I felt much lighter, and thought I should not be surprised if I flew out of the window. I once played a game of draughts with mother. I did not make a single move myself, but I beat her. I scarcely knew the game at all; something within me seemed to say, "Not that one, but another." I have told you God was a lover. In one instance He was a father, and I was an elder daughter. When I do not wish to speak, it is that the under-self crops up; the middle-self, or real personality drops out; new self forms. The under-self is very real, it is something you can almost catch hold of; the under-self is an imp, uneducated, unrestrained.

June 10th: I have been very well except Thursday. I had a queer head after a dream that was not very good. One day I felt changed for an hour or two; I got entirely different; I got back to my condition before my illness. In my day-dreams I wished to marry some above me. I finally married God.

July 10th.—In a note: I was much more awake than usual; about 11 p.m., when I thought I was just dropping off to sleep, I became alert suddenly, mentally exclaiming: "That's that! Who would have thought of such a big effect?" It was as though the top of my head had become very much elongated, and was filled with intricate machinery going at full speed in all directions. This went into a heavy head, which disappeared by morning. I never got any settled sleep. Fundamentally there is in me the woman that clings. I reasoned thus: Cupid, like the Godhead, must be capable of breaking into innumerable

parts, each part a whole. Generally, with Psyche, he dwells in us. Occasionally these two come out to have a look at their handiwork—Cupid and Psyche, God and the devil. Cupid must be the devil, and Psyche God, and Psyche was a woman. One for the suffragettes.

July 13th: I felt different all the time after God came. I felt that I had not to eat or drink, and the feeling was so intense that I could not eat or drink. I felt strangely like J. that morning. I did not see God in the wriggling, I felt him. I awakened from sleep and it happened.

August 3rd: The dizziness—I remember quite clearly feeling disturbed about breakfast time over the sexual feelings in the mill, and I remember trying to throw them off about 3 p.m. It was at those times that the dizziness came. I noticed when walking one day here that it came after dissatisfying thoughts. That has occurred since. J. was responsible for my breakdown—her death, and making me get hold of her personality. The most noticeable feeling was that I was younger and rounder. Some time ago I mentioned to you two heads on the pillow, each with its own thoughts; it was like two circles of thought in one person.

September 13th: In reply to the question as to what change she felt when she went into the dream state, the patient said: "An unrealness, a delightful dreaminess. You get a peculiar detachment from the physical."

September 23rd: I thought much of devils after the idea came to me, the idea of being handmaid to the Holy Ghost. The devil is greater than man. One would take either God or the devil rather than ordinary man. I remember kneeling by the bed, and it was as though the devil was there, and I had to appease him in some way. Afterwards came the idea I gave you—that was a great shock. The feeling of combination with J. was constant. I had the idea I should bear children by God.

July 13th: R. referred to the note, and the feeling in the head.

B.: Never had the feeling before; after the first word-test I had the feeling of discs running around in my head. . . . The sexual dreams did not invade any other day of the week but Monday. I had begun to be anxious because they came so regularly. I am in the position where I want to tell something, and I do not want to tell anything. I want to get done with it. The whole dream hangs on what I have to tell. It seems to touch the most disagreeable part of the whole business. [Long pause, a quarter of an hour.] B.: Are you waiting for the story? I told you I was kneeling at the bedside when God came to me. I understood he would teach me something—several days past. I was going to the mill. I felt different all the time after God came. I was very much like a child that night. I worked perhaps a week. Then came the night I did strange things, played with my hair. I told you of the eating, that was the same night as the hair. It seems to me I worked a week at the mill, and I was expecting something all the time after the bedside incident. They came to waken me one morning to go to mill. I had been doing the strange things all night. G. came with some milk. I felt that I had not to eat or drink, and the feeling was so intense that I could not eat or drink. My

brother said, "God told me you had to eat." He said it so naturally as though someone had been to him also. When G. said that I felt I had been betrayed, I said I would go to the mill. That was at 5 a.m., and I was still doing funny things. I remember the relief that I should stop doing the things and go to the mill; but I kept on doing them, and did not go to the mill. All the time I was playing with my hair, pulling it out, and it would get tangled. It was as though I heard the clanking of chains—it was hell, not horrifying, and yet it was horrifying. I prayed before that. I told you that I read the Commentary after J.'s death—several bits from the Bible. From that I got the idea of predestination; it seemed unfair if it was so. The prayer was, after I had seen God, that everyone living and dead should have a chance. Besides the hair there were spirits coming up in detachments from Hades; then I was eating something, and it seemed to me that what I had eaten symbolised some good effect for them. At times I sang "Heaven and earth are reconciled"—then more funny things, and I would sing again. I felt strangely like J. that morning. Another thing, I was sick periodically, like the way the spirits came; I was not actually sick, but I felt the symptoms periodically. I told my people I would go to the mill, and said "Go away." I waited for whatever was in me to speak, and said "Yes, I will go." I was relieved to feel I was sufficiently ordinary again to go to the mill. But the things went on without stopping. I could not get up; during the sickness I knelt on the floor; the spirits came, and I sang when I was on the bed; I was in bed too when I was pulling the hair. I was menstruating at the time, and that enters into the symbolism. I remember standing on the bed, nude. I was singing—collecting the hair. Dr. C. came in while I was in bed. I do not know when I rubbed holes in my hands, but the holes in my hands were symbolic of the nails; it burnt terribly when I touched the holes, but I could not separate the hands. Then, after I got the hair together, the symbolism had to do with the four corners of the room—the top corners. When Dr. C. came I did it behind his back, and I did it when G. came into the room. It seemed to me that the Dr. and G. would be more active supernaturally than anyone else. I was in the nude. That was the end of one set of symbolism. I was nude when I had finished the symbolism in the bed, and I got on to the floor. I was so tired; the whole thing was so intense. The hair did keep falling without any pulling; I was picking it up a long time; it symbolised something that must be destroyed, the jarring things in the world. I was intense to get every hair together—from the floor, the sheets, the pillow, the nightdress. I picked them clean and could stop, and again hairs would be there. I was nude on the floor, very tired. I sang and, although I can't sing, it was beautiful. I told you I was thinking of going to the mill, but I could find only my oldest things—everything was exceptionally bad at the time. I looked grotesque. I put the clothes on properly, and went downstairs; took the nightdress and the hair with me, threw the hair on the fire and watched it burn. The symbolism went on with the nightdress. They made me have some breakfast, but I could not stop the symbolism going on. I took the nightdress into the scullery, and started washing it. Again the symbolism went on. I bent my head far back—don't know



the symbolism of that. I had to get out all the stains—poured water off—every time I poured water off I did strange things. I bent back such a long way. I had to get all the stains out, and while rubbing it, everybody had a chance. I felt I must get the whole thing done before anyone interfered with me; then G. came and got hold of me, and forced me away. I felt G. had interfered with my duty—very intense; he had upset the world; he held me firmly, and I know I was in a chair drinking tea. They had gone to see the relieving officer. Symbolism went on, but changed to yawning; that symbolised waking up from sleep, the world waking up. I would sing the hymn. I felt then I must take the nightdress into the cellar, but it must not be put with the other clothes. G. tried to stop me. I said, "I will not do any harm." I put it in water. [The patient was then taken to the workhouse.]

July 14.—R. : What was your condition when you left the Union?

B. : The feeling I had at the gates was, am I going to be ordinary, or were these things going to assert themselves again? Going down the road I saw an advertisement of the paper, *The Tramp*. I began to do funny things again; then I knew I was just as bad as when I went in. Well! I don't think I gave you clearly to understand the symbolism, but it was this; the spirits came out of utter darkness; they had been in utter darkness for ages; I inhaled them into me, breathed them in; then a stop would come, and I felt queer internally; then another detachment came, just a little different to the former one. The symbolism was that I had eaten of Christ, and the spirits when inhaled came into contact with this. I had eaten and became slightly material. Then the symbolism of the floor. The order of events was God came to me, and spoke to me as a child; then after a few more days in the mill came the wriggling, then I threw the flesh off, as I told you before; then the eating of Christ, the hair. The symbolism of the floor was that I had inhaled the spirits while in bed or on the bed; they had come into contact with the Christ; were changed a little; then they had to come out again. That happened when I was on the floor—that was the sickness. I had all the symptoms of being horridly sick, but was not actually; then followed the twisting of the hands, and the singing. The symbolism on the floor was the opposite of that in the bed—exhaling instead of inhaling, with periodical singings. During the morning I saw the cross and the star—beautiful—symbols of God—the source of the river of life; one could not call it gold or silver—elements of both. There was one huge eye—no body connected with it. While in the Union I saw some lovely iris, the flower; J. had some sent her while she was ill. This I connected with Egypt and J. I told you of the incident of the tea. In the Union I never drank the tea—it was horrid, a mixture of tea, coffee, and soup. Once the head-nurse offered me some of her own tea. I tried three times to drink it, but something held the cup down. I told her I could not drink it. I got the idea of unfair play. Two patients once asked for some tea, and were bad after they had drunk it; they said it was poisoned. When I could not drink the tea I got the idea that something was put into it to make patients worse, so that they could be sent away to an asylum. Then I went home. I told my people of the prophecy of Isaiah: "Ye shall sow by

many waters"—quite likely to be in England—"Someone shall arise and be not of you." I was not religious. O. W. Holmes said in one book, "Will anyone ever lift the mystery? I sometimes have thought, a woman." I told them I was the person. They pooh-poohed the idea. I said no more. It seemed to me that all I did—it came to me also about the spiritual world—what the best spirits were doing—it would need their full courage for what they would have to do for the world. It seemed to me I came into touch with many of the best spirits. I can't remember any, but O. W. Holmes. There were others, but I can't recall their names. It seemed to me that forces were guiding things. I seemed to touch Parliament, the affairs of the nation, the affairs of China and Japan, of France and Germany. They saw nothing peculiar in me at home, but I was living a life apart from them. I remember the symbolism at B. I was doing peculiar things in B., and the first day at home—it seemed to me that everyone, that things were coming in a funny way—a glorious dream, and yet not a dream, but a feeling—it was for a good broad wide thing, not charity or helping people, but spiritual agents were acting and I saw what they would do. I had no feeling of spirits, but I knew they were acting. At B. I did eat a lot: I could not stop eating; at times I thought I fed like the rich, at other times like the poor. I planned all sorts of things. I know, one thing was very great. Whatever I said seemed to be echoed, carried, and multiplied and carried to certain quarters: this applies to what I said about China and Japan. I repeated the phrase "From sunrise to sunset," as though we ought to live that way. I would press on the table to symbolise it was being laden with good things. At home the first night I sang loudly to the four corners of the room—that meant not north, south, east, and west, but to all quarters. I remember being bright and merry; they could not help laughing, but wished me to be quiet. I suppose I was mad, but there was a purpose in it. Again a table heavily spread—I suppose it meant it was spread for everyone. Did I tell you the incident of the stars. I did tire Ma—I did funny things at street corners, twisted round. I did not know where I was going, but at a certain point I would twist round or place my feet in a funny position—I touched the spooks around me. I never tried to fight the power that held me. Ma tired—we had walked a long way. I said the stars would lead us—I meant that I should feel the intuition to turn at the right street; we passed the street and got lost. When I met certain people I did strange things, as though breathing on them, to get into supernatural touch with them. The youngest nurse at the Union was very pretty. I was doubtful what would happen. I thought the force might wear itself out, but also that possibly I might be somebody big, and she would be my maid-of-honour; but I found she would not do; beyond being pretty and flirting, she did nothing else. She used to say, "Get up." I said, "Yes, I will." I was only late once. I have reasons for being late here. Now we come to the things that happened while I was out, don't we? I remember going into town with mother; while there it seemed to me I had to go home alone. I got rid of Ma. I went across all the roadways on my toes. I came to a prominent street and thought you will not wish to do that here, and I missed a few in the middle. At one small place a policeman laughed to see me playing at being a kid

again. Another time I went a walk into the country with Ma. I was as though setting flowers for future generations. I was singing quietly all the time. Everything seemed to be ordered when I was out; everywhere I should go, and whom I should visit. I don't know whether I lay in bed late or not. Always before I had been an early riser, but after returning from the Union I think I was late; I don't know, but I saw and did the most strange things after they had gone down. In the room at the Union I saw the Cross and the Lamb. It seemed as though I went through all the experiences of motherhood, just in a spiritual way, as beautifully as one could do. It was really symbolism, the beauty of motherhood. One morning I thought that in every bedroom there ought to be three figures on the mantelpiece, according to the position of the folk, in gold, silver, bronze, or china; Crucifixion in the centre, the rock with the Cross and the star with the Cross, and four pictures in the room—over the bed the Crucifixion, by an old master, can't remember the artist; opposite that "The Light of the World," by Holman Hunt; then Watt's "Charity"—this always reminded me of the "Madonna"—and last, "Christ in the garden of Gethsemane." It seemed to me that was the binding together of the people. The Catholic Church is held together better than the other Churches because it has more universal symbols. One thing I saw those mornings. J. was simply full of consumption; when she died it had not disfigured her; just after she died, left alone in the room, I kissed her. It was a terrible shock, the strange odour from her mouth to me, but I would do it again. That set my thoughts going—if one—J. seemed. The air around her seemed thick—one felt coming into contact with germs. I have some imagination, but I do not go too far; sometimes she used to get up little bits of concentrated germ life—how I hated it!—the look of it filled me with hate. It came to me, were not churchyards dangerous? One of the thoughts afterwards was, God did not want people cremated—the idea was churchyards near the sea. I saw most strange things. God said, folk would understand the mechanism and the use of things more than I would. It seemed to me many of the thoughts I gave rise to would be carried forward as quickly as God desired, that the spiritual agents would take care of it—the mechanism of those things is so vague—I could not tell it to you what I saw—it did seem that water came in, in some way in connection with the spiritual life—life was easier to those near to water than to those far from it. Another thing, one morning I did a mad thing; I would get under the bedclothes and nearly suffocate. I would creep out from the bottom of the bedclothes, and go in again at the top.

CASE 2.—Admitted in 1912, æt. 38; occupation, a school teacher. Her mother was not married. The certificate was as follows: "I fully believe in re-incarnation. Since a year ago my mind is strengthened, and the whole group of the incarnation are in it with me. I firmly believe that all should know the truth, as I can see what others cannot see."

She has a rather masculine appearance, is well developed and well nourished. She is energetic and determined. Her memory is well preserved. She has a divergent squint, but no other abnormality has been observed. There is no sign of active disease in any organ.



Immediately after admission the patient announced, "I am the re-incarnation of Jesus Christ." She said that up to the year 1909 she had done her work well, but in that year she had a physical breakdown. She said: "I lost muscular power. I could not walk, see, write, or speak; it came on instantaneously; I do not know what happened; there was something in my head like an alarm clock." She would not admit of having had a mental breakdown. After that attack she was much changed. She complained, "I cannot teach." She said the children were not so well behaved or so well up in their work. She felt that her life was incomplete, that she wanted sympathy. This led her to approach some of her male acquaintances: she thought she had an attraction for men that she had never had before, and she proposed marriage to several of them. During her life she has known some theosophists, and has read books on the subject of theosophy. After her breakdown she went to stay with some friends, and met a medium who told her that in some previous life she had been a man.

The head mistress of the school informed me that she had been an excellent teacher, so that the class was left entirely in her hands. During the breakdown in 1909 she suffered very much from constipation and indigestion. She ate very little, and sometimes, about an hour and a half after taking food, she passed into a babyish condition. She drawled her speech, and said often in a childish fashion, "Oh dear! is not my voice queer?" During this attack she was almost doubled up when she walked, and her gait has remained altered since. From the time of this attack a distinct change in her mental condition was evident. The first sign noticed by her friend was that one day when they met the patient said, "You have been standing still mentally, and now I have passed you." She became extravagant, and instead of dressing quietly, as she had done before, she bought clothes not in keeping with her position in life; she did not wear these things, and in spite of her wearing her old things until they were untidy, she was very vain. After the attack it was evident that sexual matters influenced her very much. She was often out late at night. She said, "I love Mr. X." She wrote to one man, "When I found I had aroused in your mind feelings deeper than mere friendship, I was thunderstruck." Remarks such as these, her general behaviour and her letters were quite unlike her former self. In 1912, a cousin, æt. 32, had had a mental attack. Her mother is peculiar.

June 12th, 1913.—C.: I will tell you the effect of the last few months. During the two years I have had to pull myself down to fit conditions. When at home last year what I would have liked would have been plenty of books. I could have made use of them to get companionship. Instead, having few books, I wrote the letters and walked terrifically. I thought if the matter were taken up I would make friends with people. I ignored nobody. I never tried that before. I have always shunned crowds. In my teens I was sociable, very reserved afterwards. I have made a big effort the last two years to break out of that solitariness; since I have been here I have mixed with these people, and what is happening is that I can mix more easily. I have understood them better, but I am becoming more isolated; at first when here there were so many jars that it occupied me a good deal. I



contradict myself so; things are easier now, and that is both an advantage and a disadvantage. I must contradict myself. I feel that I have not a single friend in the world, but I make no complaint. I feel I have not a scrap of affection for anyone, but I feel no bitterness—it would not matter to me if any acquaintance or I myself were removed by death. I can't think what in the world is going to interest me—that is where I am stuck. I can be interested temporarily. I am more capable of being interested because I am quieter. I mean I am more capable in being calm but less capable because more abstract. I can't think how I can be aroused, surprised, or offended. I am not interested in other people or in myself—that is why I dropped the idea—I am content to moon along. I don't care.

June 21st.—R.: It must have been a strong impulse to start you writing.

C.: They were rum letters. I gave advice to Asquith and Cantuar. I wrote them a year after the idea came. I wanted social life different to what I had conceived it before. What put the idea into my head was the appreciation which the men M. and H. expressed.

R.: Of you as a teacher?

C.: No, as a person. It was M. first. I did not get the idea from him. I knew I was behaving extraordinarily. I knew other folks would consider it peculiar. M. came to the school; I talked to him; Miss — was present. It was the first time I opened out to anyone. This was the last summer I was at school, and more than a year before coming here. I was so pleased with M. that I went to his school. Miss — did not know where I had gone; that was a Friday; the next day I had the impulse to write to him. The first letter I put in the fire, it was so comical. I laughed all the time; the words just fell off the pen. The second letter was more controlled. I wrote him every day fierce letters, railing against being fastened up in a dog-kennel of a class-room. I felt I ought to be in touch with people, and I was pleased he was in touch with me. I was boiling over with delight. I had seen Mr. —. He referred to the letters; he showed his appreciation when he came to the school. Some time after that the idea came into my head—it was different to anything I had ever read of; when I was ill three years before, and Dr. — attended me, I could not understand him, but the idea explained his being affected by me; the idea came to me a year before coming here. I began to write three months before coming here; the idea was suggested to me by these people being in touch with me; it was the appreciation of H. which decided the idea.

R.: After the time you lost your voice you were no longer so friendly with Miss —.

C.: She did all right for some years, and later at intervals. The quarrels alienated us. I was very friendly with Mr. —. Then it puzzled me that he also seemed to drift away from me. I accepted that, but I could not accept that of Miss —. I had no heart to make new friends. At last I came to the conclusion that I could see nothing ahead of me at all—I had nothing to live for—I was not despairing or hopeless, because I had no ambition. It was a big puzzle. I said to myself, "This is the stage where some folks commit

suicide." The idea did occur to me, but I should not have done it because it would not have solved the difficulty.

June 23rd.—[C. told me she had had a large number of ideas running through her head after the last interview. The thoughts had been very interesting. She had the thoughts most of the night.] Not dreams, I was awake—that's where the repressions come in. I have got into the habit of putting thoughts aside, and going into the groove I have cultivated here; when I first came here I could not think how to fill in the day.

R.: How long were you in developing this capacity?

C.: It was very gradual; it commenced two years ago. I may go lower, that is also a matter of indifference; yet the only regret is that I feel such a fraud. People think I am interested, but I am not. I have no sympathy with anyone. The heroine in the book said, "How near death was to her during the riot," and "that death would be always easy to her after that." That is where I have changed so immensely—it has all been mental; I have had no experience. I used to be greatly upset by serious illness and death, most because I could not get at the back of it; perfectly horrible to think of anyone dying, and you could not master it.

June 27th.—R.: How is the dream state getting on?

C.: It does not get on, it is stagnant. I don't think or take interest in things. [She had just been talking in an interesting way about the novels of Daudet, and London.] The interest I have now is not the same as I had before, there is a change in my attitude. I should think I am dead, as near as I can imagine anybody to be. What I thought about after the last interview was that I had again reached a stage similar to the suicide stage—no outlook—the first time I had no hope whatever, no faith, only a dogged waiting. [The patient refused to admit she had had a mental breakdown; she objected to the term.] The idea after my illness had a strong emotional tone. I was very interested in my physical illness. I examined myself with interest. I remember my hand felt dead. I could not feel anything I touched. Once I had a noise like a clock in my head, a sort of buzzing, it rose in pitch and got quicker. I was not with people during my childhood who encouraged any show of emotion—feelings were not discussed. The people I was most interested in were those who were kind.

R.: The proposals (proposals of marriage).

C.: It was an effort to meet the situation. I know what prompted them. When the idea came to me I saw that I had got it mainly from my experience with the opposite sex. I gathered immediately that sex would play an important part in it; as to what part I did not know, and that was the puzzle. The first thought was that I had to be a woman who had to resist and overcome all sex, and lead a celibate life. I thought that would be easy. The satisfaction I had in looking forward to such a life proved there was no unsatisfied capacity. I think the weakest step all through was the proposal to you—I could not argue that out—Nos. 1 and 2 were quite legitimate.

R.: Why was No. 2 more legitimate than No. 3?

C.: Take No. 1. I began with the idea of no marriage but the closest friendship apart from sex matters, but I could not get the doctor

at Colwyn Bay to talk to me, so I began to think I was not going to be able to let the companionship strike out the sex. At the same time I had not picked out the group then, I did not tell him of the group. I was not drawn to marrying a man I had just hopped on, and who did not attract me more than others; I thought the sex matter will have to be attended to—whether one man, or where the limit was coming in was the puzzle—it was an awful outlook. I thought at any rate I was not going to lead a celibate life. I had to make things look big. I thought I had to live an ordinary life. I had to marry as all women do, and have other friendships. As he was the first to present the sex question, and the position was interesting, and as I had been sent to C. B., I thought that must be the man I am going to marry. I left C. B.; went home; puzzled for months what I was to do. I could not get the doctor to take any initiative, and of course I did not ask him, but I was puzzled. I could find many reasons why he should not—evidently I must take the initiative—puzzled how to do it.

July 2nd.—C.: Very well, now. I got the idea of the re-incarnation, and the feeling it brought was an explanation of all that had happened to me, and a feeling of satisfaction, knowing that things would work out, although I did not know how. I knew it meant great power, but being a woman I had no desire to exert that power—it was of no interest to me. . . . That would be a good way of proving it. Now, I have got into the same lines; if I am Christ I could get out of this asylum if I wished; the power may be there, but being a woman I do not want to use it (I mean the power to make people do things—it is repugnant to women to use such a power). What interests me most is that I have got myself into this state of indifference. I conjecture as to what can get me out of it; so, from that point of view, although not urging anything, it would be interesting for me to be faced with what all the world considers interesting and powerful. What is the strongest force in the world? Sex, I should think; it may not be. I think, seeing it was the factor which awakened the idea of re-incarnation in me, and that it has been active since, it must be important. If we deal with the biggest force, the others will fall into line. What has sex to offer me? One thing, interest. Now then, which would be the stronger, the interest of my sex, or my indifference? I am just reasoning it out.

C.: I have proof of the extraordinariness of my personality.

R.: What proof?

C.: I shan't tell that—nothing proves the correctness of the re-incarnation; that is simply my explanation. Although the idea originated in the sex question, still everything in connection with me fits in with what I should conceive of Christ. Lately I have been thinking. [Long pause.] Two years ago, and for some time after that, it was as though there were two people in me. I could observe myself; I had not much feeling in the matter; that was why I could go through such extraordinary things. Now they are getting welded, and that will be a painful process. I am coming to life again. There was nothing special but the buzzing in my head. I want to know what that was.

R.: What was there besides?

C.: Nothing but the loss of feeling, of speech, of the use of my hands. I had sensations in the head; these sensations were at the beginning of my breakdown. I had them for a few days only. On a Thursday I walked to see Miss —. Slept that night. Next morning I collapsed. Noises in the head on the Friday morning. I was in bed; could not see; I lost my speech; I could not articulate. I soon began to improve, but it was six months before I could write. The pen performed capers on the paper; almost a double personality. I watched myself. I was a thin, wretched creature.

July 20th.—C.: I have not had a breakdown, but I have been in an abnormal state. I can't get rid of my abnormal self.

July 20th.—C.: Never mind the abnormal self; the abnormal treatment has resulted in a paralysis; one consequence is that I do not like to be touched. I don't touch anybody.

R.: Why not?

C.: Because it is easy to touch—the handiest method of approach, and it is treated carelessly in many cases. The only person I cared to touch was O. P., not M.; occasionally O. P. and I were in harmony, that permitted touching each other, and we did it. There were various ways, always nicely done, very nice altogether. O. P. had pretty ways; she was not rough with me, did not pull me about. C. laughed. Funny, one day she was sitting by me on the couch; she began to rub her hair against my hair. Two cows do that. C. laughed. Very amusing, not rough, not clumsy; she was not dependent, not always clinging; just odd moments. I did like her, she was interesting. I had most interesting engagements, encounters with her.

R.: What was she trying to do?

C.: In touch all along the line. I was very upset when they took her to the single room that night. After she went to the single room she used to come to our dormitory in the morning, and smack us. I pulled her down one morning. She came down beside me quite content—all very interesting—she responded so easily, and went to such extremes. I did not encourage her to touch me as much as I should have liked, because she handled so many. You could not object, she was quite in earnest.

Later the patient said: "When a child I did satisfy the physical. When aged about 18 I was friendly with a young man the whole year before I went to college. That was a new thing in my life; instead of studying I went out with him. I did not do well in the examinations. Before I went to college he said I had better do what my mother wished, and have no more to do with him. It was a shock, and it finished at that. I thought I could not be of much account."

Note, December, 1913.—I am growing more and more unmanageable. It is not that I wish it, I cannot help it; I cannot control my own mind. I am not insane; I do not think I should call it insanity; but I fly about, and float in thin air. I do not appear to be solid, and nothing else is solid. I am different from what I was a year ago in this way. Nothing seems of any consequence. I am more interested in simple things. I can read a book, for instance, but the trouble is that everything passes away from me so quickly; everything fades



and vanishes ; my immediate past seems as far away as if a thousand years had intervened. I suppose, as all responsibility has been taken away from me, I have grown irresponsible. I would really like to be serious, but it does seem to me that I shall do nothing henceforth but play.

[This was a spontaneous effort on the part of the patient ; the interviews she put an end to some weeks before.]

At an interview on December 7th, three days after the receipt of the note, on asking for an explanation of "I have not control of my mind," the patient said, "It is a loose thing to say ; it would be more correct to say, I can't control it so that interest and concentration continue." That I have not control is because it looks as though I have not control because I vary so rapidly. My letters indicate that. When I write a letter I am centred on the phase I express at the time ; then I express something else just after. I don't think it is a right condition ; there should be some steadiness. I should think what causes the rapid variation is that I cannot accommodate myself to outside environment, and that it is lack of understanding, and lack of power of accommodation. I think it is stupid to fluctuate so, you can't depend on yourself.

R. : Then with regard to "I am not solid, and nothing else seems solid." It was pointed out that she worked, sewed.

C. : I do not mean in dealing with material things, but in thinking of them—Dean Swift, and the Lilliputians and giants—something of that sort—*Gulliver's Travels*, something like that. And it is a happy frame of mind, inconsequent.

R. : Is it you who have changed ? Do the things appear real ?

C. : A bit of both.

R. : They do not always appear real and solid to you ?

C. : Yes, that is it. It is not nice ; it is happy in one way, but you can't get hold of anything. By the way, when I said I don't feel solid that is reasoning backwards. I do take an interest in myself, I am self-centred ; but I do not take an interest in others ; that is where the balance is upset. They don't appear solid, and as I class myself amongst them I don't appear solid.

R. : When did this first strike you ? You admitted it was nothing fresh.

C. : Have you not noticed it all through ? I don't know what personality is, but when I fluctuate so I do not seem to have any personality.

The two cases I have laid before you resemble each other closely, and offer many points of interest. Both patients on admission declared well-defined delusions. Case 1 said, "I am the handmaid of the Holy Ghost" ; and Case 2 said, "I am the re-incarnation of Jesus Christ." It needed very little investigation, however, to discover that the appearance of these delusions had been preceded by a period of mental disturbance, which in Case 2 had existed for years, and moreover evidence

was obtained that influences acting on them through a great part of their lives had warped their psychic development. Case 1 was a confirmed day-dreamer, and for some time before the delusion had appeared she had felt these dreams ought to be stopped, because "I was getting frightened, they were getting such a hold upon me." In 1911, she nursed a sister through an illness which terminated fatally, and after this she noticed a change in herself. This change was described by her in expressions such as the following: "I became my sister actually; I had no free will; I was directed by something inwardly, not myself; I was possessed by a hypnotising force stronger than myself; I was guided in every detail of my life." This condition, which persisted for months, she could not understand, and finding it impossible to live under the influence of something she did not understand, she had to find an explanation somewhere. This explanation in her case was provided by a dream. She described it in this way: "I was kneeling by my bed when God came to me, and afterwards I believed there was a God. A few nights later God appeared to me in human form, and from that time I became the handmaid of the Holy Ghost." This explanation had the additional advantage that it depended on something supernatural. Further, she said: "I was asleep when the Holy Spirit came and awakened me; everything was intense; I wriggled; what entered me I do not know; the power was intense and went all through my body." Then came the statement: "I felt different all the time after God came to me; I became J.; I felt rounder and younger." It was this change which perplexed the patient so long, as is seen in her saying: "I used to be the practical one of the family; I cannot understand going over." After this the patient began to live a different life, in which every sensation, every idea, became a symbol for something. She lived a life of symbolism, much as is lived in dreams. Her history of her illness is a mass of symbolism, and frequently during the last year she has said: "I felt so-and-so to-day; what could that symbolise?"

The history of Case 2 shows that up to 1909 she had done her work as a teacher quite well, but in that year she had a "physical" breakdown. She said: "I lost muscular power; I could not walk, see, write, or speak; it came on instantaneously; I don't know what happened." After that she was much

changed, and complained, "I cannot teach"; and that her voice was altered—"Oh dear! Is not my voice queer?" She became extravagant and bought clothes not in keeping with her position in life, but she did not wear them. She thought she exercised an attraction over men such as she had never done before, and she made proposals of marriage to several. Later in the investigation, she admitted "at the time of my breakdown, and for a long time after, I felt as though there were two people in me." Recently, she has described her condition as follows: "I am growing more and more unmanageable. It is not that I wish it, I cannot help it; I cannot control my own mind; I am not insane. I do not think I should call it insanity, but I fly about and float in thin air. I do not appear solid and nothing else is solid. The trouble is that everything passes from me so quickly. My immediate past seems as far away as if a thousand years had intervened. I would really like to be serious."

It is evident that in both cases a change of the personality was felt, and it is this disturbance of the consciousness of the ego that I wish to consider in this paper. This subject has received much attention recently, and by many it is regarded as of fundamental importance in many cases of mental breakdown.

Juliusberger in a series of papers has described cases in which the disturbance of the personality leading to what he termed "*Fremdheitsgefühl*," feeling of strangeness or not being themselves, was the chief feature of the illness. In one case the patient said: "I had no will-power, I became an automaton; when I looked at myself in the glass I seemed altered to myself; the sound of my voice was strange." He attributed this condition to a disturbance of organ-sensations, and therefore to the patient the consciousness of the body was affected. In this and in a later case he referred to the loss of the organ-sensations as the cause of this feeling of strangeness. He quoted Wernicke as having stated that the sum of the memory-pictures of all organ-sensations formed the content of consciousness of the material body, as the memory-pictures of the sense-perceptions form the content of consciousness of the outer world. "So we arrive at the idea of the primary ego (Meynert), and by this must be understood consciousness of the material body. Consciousness of the material body is the basis of the

whole pyramid of consciousness. It is commingled in all conditions of consciousness." In his patient he considered there was a deep-seated disturbance of the consciousness of the material body. "If the patient asserts that it seems to her as though at times she was not conscious, while at other times consciousness seems to return momentarily, this change from indistinctness to clearness will correspond to the rise and fall of the consciousness of the material body, with the change of function or non-function of the somato-psyche." In a subsequent paper on "Fremdheitsgefühl" he described a case in which the feeling of strangeness occupied the attention of the patient almost entirely. The patient expressed it in the phrases: "I have no will; I have no proper voice; I am a monstrosity; my ego is away, and then one is nothing; I am not myself." Juliusberger said of this case: "Doubtless here we have to do with a disturbance of organ-sensations." And again: "We find in this case disturbances penetrating to the depths of the emotional character, even to the nucleus of the personality. If this impelling and widely penetrating feeling-complex is shaken in its functional character, so must its impelling power and regulating influence in the course of ideation be injured; there will be a disturbance of the harmonious interaction between the feeling and the intellectual spheres." This condition must be considered a change in the somato-psyche.

Wernicke has discussed a case in which disturbed organ-sensations such as are conveyed by the expressions, "I do not know myself," and "I had hoped by observing my limbs to get back my consciousness, but I failed," appeared. He recognised that in somato-psychic disturbances the feeling-tone (Gefühlston) of the sensation stood in the closest relation to the consciousness of the material body. He said: "Usually we do not pay much attention to these organ-sensations, they escape us because our attention is directed to the sensory content of the sensation. A strong stimulus, however, may so act on our consciousness that we neglect the sensory content and turn our attention to the organ-sensation of the affected part of the body." According to Wernicke, all strong stimuli from the periphery are accompanied by a feeling-tone which is to be understood as the sign of some affection of the material body, and must be defined as an affection of the consciousness of the material body. These organ-sensations are of real importance



for the appearance of the feeling-tone of the sensations, that is, for the character of pleasure or displeasure which accompanies them.

The same idea has been well expressed by Bianchi. He says : " From all parts of the organism there is a constant flow of nervous waves which establish relations between all the organs of the body and the highest nerve-centres. To these are added all specific sensations by means of which the subject experiences an infinite series of changes through immediate contact with the external world, and whose final result is a progressive comprehension of one's own organism. This becomes more distinct in the environment in which it lives, thanks to the mnemonic reproduction of all the physical qualities of the surroundings, and of the modifications which the organism undergoes under the influence of the agents which act on it. These nervous waves from the organs to the nerve-centres do not awaken true states of consciousness, and hence do not give rise to sensations in the strict psychological sense of the word, but they are represented in consciousness as a sense of our own existence. This sense, the *cœnæsthetic* sense, the sum of all the sensations constituting the organic personality, gives a peculiar tone to consciousness, and is constantly modified, as the consciousness of the action of the outer world is modified. This *cœnæsthetic* sense becomes more evident in cases of functional difficulty, in cases of conflict in which the harmonious working is disturbed. . . . From such functional difficulty springs a sense of ill-being, lowering of tone, and a new attitude of consciousness. . . . It is this sense which regulates the sensitiveness of the personality, which is one of the factors of emotivity." Ribot also maintained that the *cœnæsthetic* sense was the basis of the personality.

Juliusberger, in a later paper, said that Wernicke's *somato-psyche* must be recognised to contain two constituents—an emotional and an intellectual. " The latter includes my body in so far as it lies amongst my representations, as something belonging to the outer world." He applied the term "*somato-psyche*" to these representations, and adopted the term "*Thymo-psyche*" of Stransky for the emotional side, the feeling-tones. He went on to point out that we separate the sensory constituent of a sensation (*Empfindung*) from its

feeling-tone (*Gefühlston*). He defined sensation or perception as the becoming conscious of a terminal condition, *viz.*, the reaction of nerve structures to some stimulus. Sensation or perception is the equivalent of a perception of reaction. But not only the terminal condition, the final product of the work done, comes into consciousness, and gives us a sensation or perception, but also the work-activity of the nerve structures comes into consciousness, and gives us the organ-sensation. If we consider the sensation or perception as a perception of reaction, we must consider the organ-sensation as a feeling of action. Kutzinski criticised Juliusberger's early opinion on organ sensations, and both he and Försterling consider that the basis of the organ-sensation is the feeling of activity (*Tätigkeitsgefühl*). Försterling, after giving in detail a case in which the feeling of strangeness had been prominent throughout the illness, explained the condition in this way: Every sensory stimulus which crosses the threshold of consciousness is perceived by us. The perception is laid down in our brain-cortex as a memory-picture, and other memory-pictures which by reason of some affinity or similarity can become associated with the new memory-picture, cling to it. The perception therefore becomes a new detail of the contents of consciousness with which the thinking process can operate as with something recognised. But the sensory stimulus, which acquires a psychic character at the moment of perception, brings about not only an intellectual addition: it has another quality, a feeling-tone (*Gefühlston*). The feeling-tone of the perception must fundamentally be regarded as a feeling of action or activity. Just as, to give a coarse example, we feel a sudden bright light to be painful, or the noise of an express train becomes painful if we stand near the rail as it passes, so all perceptions bring a feeling-tone with them. These feelings are based on organ-sensations, that is, sensations of the material body, and these somato-psychic sensations bear an intellectual as well as an emotional character.

Now Myers, in speaking of this subject, has said that "whatever be our limitation or definition of feeling, we have sufficient evidence to indicate that pleasure and displeasure—and many authorities assert that pleasantness and unpleasantness are the sole elements of feeling—are independent of afferent impulses derived from organic or skeletal movements

(occurring in the expression of the emotions). Nevertheless, we must regard the various organic and skeletal movements as closely associated with the presence of states of pleasure and displeasure themselves. We may consider the organic and skeletal movements, not as determinants of the degree of pleasure and displeasure, but rather as the outcome of those central changes, producing excitement, effort, or strain, which accompany or follow pleasure or displeasure. The sensory stimuli or afferent stimuli derived from such movements doubtless reinforce the central changes in question. Adopting this view, we may with far greater probability refer the influence which a pleasant, indifferent, or unpleasant stimulus has upon muscular effort to changes in central excitement or strain, rather than directly to the pleasant, indifferent, or unpleasant feeling to which it gives rise." Kutzinski also has pointed out that the complex of organ-sensations does not constitute the primary ego, as Wernicke has suggested. For example, there is a complex of sensations connected with bending the finger, pressure of muscles, of the joints, of the wrinkling of the skin. But besides these there is an intuitive process of consciousness which can best be described as a feeling of action. The complex of organ-sensations is appreciated just as a colour; it is a receptive experience, and includes nothing of the feeling of activity. He gave the following example: "If one makes the experiment of accompanying the inner action of affirmation with a shaking of the head instead of a nod, this false movement of expression, together with its sensation of tension in consciousness, will not change the feeling of affirmation to the feeling of negation, as it should do if the sensation of tension were the primary factor. On the other hand, it is a common experience that other organ-sensations, even strong ones, such as hunger and headache, can by internal concentration be extinguished from consciousness." All this shows that the complex of organ-sensations cannot represent the primary ego. He referred to the fact that the great distinction between the body ego and the ego is that the ego has such a control over the body. That this form of dependence exists is a fact of consciousness. The dependence of the body on the ego is expressed in the power which it has over the body. He suggested, therefore, that efforts or processes of activity, form the nucleus of the ego. He pointed out also in the case of

Förster and in his own case, that at the beginning of his complaint the patient expressed a general experience when he said, "The usual human feeling is lost to me—it is as though I was no longer there—I exist no more; all is over for me." Later appeared the special complaints. That general expressions were used first shows that primarily the active feeling ego had undergone a change, and that the alteration in the region of the body had come secondarily. The building in of certain portions of the complex of the body-ego is rendered difficult through the lowering of the feeling of activity (*Aktivitätsgefühl*): and therefore the organ-sensations cannot be valued by the patient. Further, if under the influence of external stimuli—*e.g.*, the blowing of the wind, or the touching of the hand by another—the feeling be intensified, this may be explained by the summation of the stimuli which have been introduced into consciousness, and have led to the heightening of the activity; and this activity has developed a marked ego-feeling. This cannot be attributed to the organ-sensations, because most of the organ-sensations are not perceived by us. Moreover, the case of Alters, in which the condition of the body changed from moment to moment, cannot be explained on the theory of the organ-sensations. Each look at his own body which the patient took gave him a different impression. He saw quite strange characters in himself which did not correspond with his memory-pictures of his own body. This frequent variation in the disturbance is not to be explained by the organ-sensation theory. It would be stretching the point too far to say there was a continuous active change of the organ-sensations without admitting some determining outer or inner psychic stimulus. It would be better to rely on a physiological explanation, although it may be hypothetical. It would, perhaps, be nearer the mark to suggest that the intensity in the building in of the bodily and external impressions in consciousness had undergone variations, and so led to the strangeness of the body, and of the outer world. A lowering of the activity in all its manifold means of expression appears in all forms of illness in which this symptom is marked.

Therefore the organ-sensation theory fails, as also does the emotion theory of Oesterreich. In opposition to the primary body ego of Meynert and Wernicke, Kutzinski finds the funda-



mental component of the ego in the experience of action (Tätigkeitserlebniss). "The feeling of activity is the reflection of a special process, the apperceptive and reproducing process; the sensations, representations, the feelings, form the content, the result of this activity."

Before we go further it would be well to see what is included in this apperceptive activity. Lugaro, writing on this subject, said: "The doctrine of apperception, stripped of all mysticism, is based upon the conception that there is a graduated series of organs and functions, which is equivalent to saying that there is a series of gradual syntheses, which culminate in the higher psychic processes forming the personality. This takes place in some hypothetical supreme centre. Moreover, it admits a mechanism of action and reaction developed among the centres of varying grade, with the result that the lower centres not only receive external stimuli passively, but their functions are regulated by the action of the higher centres. We are in a position to recognise that the process of perception is not purely passive, but that, while new impressions arrive by the sensory paths to a centre, other currents move out from the superior centres to meet them, and they exert an elective and co-ordinating action, favourable to some, unfavourable to others. This reflux action, which is initiated in the centres in which we locate the highest syntheses, and the sense of the psychic personality, extends as far as the peripheral organs; and not only to the muscles which direct and adjust the sense-organs, but even to the receptive apparatus itself. The biological aim of this mechanism is that of attention, to limit the field of consciousness, and render it clearer. The reason why this choice should be exercised by central action is obvious; it is guided by antecedent experience and personal interest. . . . Anatomy seems to sanction these views. The minute anatomy of the nerve centres is adding some most important and unexpected knowledge at the present time. There are fibres in every section of a sensory path which run in the opposite direction to the principal current and arise in the same nuclei in which the afferent fibres terminate. Between centres containing different images they exercise, on the one hand, an associative action; on the other hand, they are able to facilitate, raise, or inhibit certain associations in preference to others. Simple destruction of organs leads to phenomena of deficiency. There is, on the one

hand, a hiatus in the psychic contents ; on the other hand, dissociation of the functions still active. This dissociation shows itself in two ways : as a purely associative defect, due to want of certain images, and of certain elements of the psychic patrimony in general ; and as an apperceptive defect, inasmuch as that action is lacking—sometimes facilitating, sometimes inhibiting—which the destroyed images ought to exert on the other images or other perceptions as they appear.”

This view of apperception of Lugaro agrees closely with the theory of Wundt. Wundt insisted on the necessity of analysing the complex phenomena of intelligence into their elementary processes. He said : “ These processes must be such as can be connected with a clear and simple psychological idea ; and this, in turn, must be capable of correlation with a correspondingly simple physiological idea. We find what we require in the elementary idea of the apperception of a mental content, of a sensation. Here we understand by apperception a psychological process in which, on the objective side, a certain content becomes clear in consciousness, and, on the subjective side, certain feelings arise which, as referred to any content, we ordinarily term the state of ‘ attention.’ Now, the objective component of this complex process, the clarification of a content, is suggestive in the highest degree of determinate physiological concomitants. . . . The physiological substratum of the simple apperceptive process may be sought in inhibitory processes which, by the very fact that they arrest other concomitant excitations, secure an advantage for the particular excitations not inhibited.”

It would seem, therefore, that the sense of pleasure or displeasure would depend on the facility and thoroughness with which the processes concerned with the mechanism for forming distinctions—that is, the mechanism for obtaining clear consciousness—are carried out, and that the somatic factor in the expression of the emotions is conditioned by the satisfactory fulfilment of the apperceptive function. The somatic factor in the expression of the emotions, the organic and skeletal movements, no doubt reinforces the central activity. Now, if a real change of this apperceptive function arise in the form of a diminished activity it will lead to a failure to comprehend external and internal impressions. Such a change did occur in the two cases I have brought to your notice in this paper.

Evidence of this is found in the descriptions of their condition given by the patients themselves. The one said : " After God came to me I felt different all the time ; I felt as though my sister who died was in me ; I felt younger and rounder ; I had no free will ; I was directed by something inwardly, not myself." The other patient described it thus : " I am growing more and more unmanagable ; I cannot control my mind ; I do not appear to be solid and nothing else is solid ; my immediate past seems as far away as if a thousand years had intervened—Dean Swift, and the Lilliputians and giants ; something of that sort. I should think I am dead ; I remember my hand felt dead. I have been in an abnormal state, and I cannot get rid of my abnormal self—I would like to express myself in a normal way, but I cannot. At my breakdown, and for some time after, it was as though there were two people in me. I could observe myself. I had not much feeling in the matter." These expressions on the part of both cases indicate a change in the higher syntheses, in the apperceptive function, and they show that the patients recognised in themselves a change which they have described in a remarkably clear manner. Their memory is intact and their powers of description are strikingly lucid. They have, in speaking of their illness, referred to this change as the symptom that impressed them that something was wrong, and later appeared the falsification of the contents of consciousness.

Now with regard to the cause of this change, we may refer again to the articles by Försterling and Kutzinski. Försterling pointed out that " a sensory stimulus, which acquires a psychic character at the moment of perception, brings with it not only an intellectual addition, but also another quality, a feeling-tone—*Gefühlsbetonung*." Kutzinski said that " the feelings are the root from which the disturbances of apperception develop. Changes in the ego-feeling (*Selbstgefühl*) determine a lowering of the reproducing and apperceptive activity." The importance of the feeling-tones is further insisted on by Försterling : " We learn of our body, just as we learn of the outer world, through sensory stimuli, but the sensations from our bodies are so numerous and so strong, and are accompanied by such strong feeling-tones—and, further, they are so much more closely associated with their feeling-tones than are the sensations from the outer world—that the total sum of the feelings of our

material bodies forms a considerable part of our consciousness." Again, "as a perception is laid down as a memory-picture, so is its feeling-tone always in close touch with the memory-picture. And when a memory-picture is called up through a fresh perception, its feeling-tones will be awakened at the same time. This happens also if the memory-picture is revived, not through a fresh sensory stimulus, but through antecedent memory-pictures, as in the process of thought, that is, so long as attention is aroused. Whenever the perception revives a memory-picture which agrees harmoniously with it, the feeling-tone belonging to it is awakened also, and the feeling-tone of the fresh perception mingles with it. That is, they become associated, and the result is a feeling of pleasure. But if there should be some disturbance in the sphere of the feeling-tones, which, through prolonged irritation or unpleasantness, produces a morbid tone, there may follow a splitting-off of the feeling of activity from clear consciousness. The subject will perceive an object, but will not feel its relation to his ego-complex ; it will appear strange to him."

Now in some cases the disturbance does not advance beyond this feeling of strangeness, and the patient will indicate this by using phrases such as "It seems to me," or "I feel as though." For instance, Case 1 said: "After God came to me I felt different all the time ; I felt as though my sister who died was in me ; I felt as though I was directed by something inwardly, not myself." Case 2 was even more definite in saying : "I feel as though I cannot control my own mind ; my immediate past seems as far away as though a thousand years had intervened. At the time of my breakdown and for a considerable time afterwards I felt as though there were two people in me ; I could observe myself : I had not much feeling in me." This last expression illustrates very well the splitting-off of the feeling of activity from clear consciousness, the disturbance of the apperceptive function. Another good example of this condition is seen in the statement of Case 1 : "Some time ago I mentioned to you two heads on the pillow, each with its own thoughts. It was like two circles of thought in one person." The failure of the normal inhibitory processes led in this instance to a condition of indistinct consciousness, of incomplete apperception so lucidly described by the patient in the phrase, "It was like two circles of thought in one person."

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Now, what evidence have we of a disturbance in the sphere of the feeling-tones which, through prolonged irritation or sense of unpleasantness, produced a morbid tone and disturbed the apperceptive function, as suggested by Bianchi, Lugaro, Juliusberger, Försterling, Kutzinski, and others?

A brief analysis of the cases will perhaps enable us to obtain a more comprehensive view of the whole question. Both were unmarried women, æt. 33 and 36 respectively, and this prolonged and unwilling celibacy was not without effect on them. Case 1 said: "You will find a satisfactory allegory at the bottom of my visions—love and marriage." The same sentiments for years formed the basis of her day-dreams, ending with her close relationship with God, and the idea she would bear children by Him. Case 2 said: "I began with the idea of no marriage, but the closest friendship apart from sex matters." This developed into her writing to various men proposing marriage, with or without the sanction of the Church. If we investigate further back into their lives, we shall find that the sexual question has had an important influence on their mental development. So far as I can gather, neither of them has had any practical experience of sexual indulgence in the ordinary sense of the term, but the "sexual," employing the word in a broader sense, has exercised an immense influence over their mental development. Case 1 was a retiring, imaginative, superstitious child, who, instead of enjoying being with other children as every child should do, spent her time in reading. The form of literature she enjoyed was the sensational: she devoured the reports of murders, divorces, and other horrors, together with the highly sensational stories which occupy so much space in the daily and especially the weekly press. Fairy stories also were a great delight. Her history contains many incidents having a tendency towards sexual stimulation. It is not surprising, therefore, to find that as she went on she developed into a day-dreamer, and that when she worked in the mill her time was occupied in weaving day-dreams. It is interesting to observe that the day-dreams on all Mondays were of a gross sexual type, but not on other days. This she attributed to her reading the sensational stuff on the Sunday, and to the noise in the mill on the Monday after the quiet day at home. In these sexual dreams she found herself the only woman in a room in which there were

several men ; she was in the nude, and tied to a bed-post. On the other days she married someone in a higher position than herself in the usual way ; these dreams, which were woven around anyone who interested her in reality or fiction, ended generally in murder or suicide. It got to such a pitch at last that she felt afraid, the dreams were getting such a hold of her. Another point of interest in this case was that she was one of a household in which no religious instruction was given, and so with her ignorance on this side, and her love for the sensational and the fairy story on the other side, she found herself when the time of trial came with as much belief in fairies as in God. When her sister was dying she asked the patient, "Do you believe in religion ?" The patient replied, "No" ; but at the same time she was much impressed by the question. A few days later she opened a book casually, and came across the passage, "There can be no salvation unless you believe." After the death of her sister she thought at first that she might see her in every bright object in a fairy sort of way, and the prayers both to God and to the fairies went on until God appeared to her one night, and from that time the fairies became less important. As I have mentioned earlier in this paper, the appearance of God was connected with a vivid sexual dream ; she at once transferred the day-dreams to God, became His handmaid, with special powers and a special mission to carry out, and she expected to bear children by Him. At this stage she had an acute mental breakdown, and was removed to a workhouse.

In Case 2 the sexual element played an equally important rôle. Her mother was not married, and this has been a handicap through her life. She has stated that as a child she did satisfy the physical. When eighteen years of age she was friendly with a young man, and "that was a new thing in her life." At the end of a year he suggested that she should do as her mother wished, and see no more of him. She added, "It was a shock ; it showed I was not of much account." In July last, without any suggestion being made to her, she volunteered the following statement regarding herself. After saying, "I do not like to be touched," she added, "The only person here I like to touch is O. P." She then admitted having indulged in contact with two women friends before she came here. She spoke of it as "a way of experiencing satisfaction ;

if you are fond of pleasure in the physical, you repeat it ; it is the grossest of all pleasures, the one which disgusts most easily and satiates most quickly." It is important to observe that her mental breakdown occurred soon after the rupture of the friendship in which contact had played a part, and she said the rupture took place because "she supposed she wanted too much." It was a great blow to her that this friendship should be broken.

This analysis demonstrates that the mental development of these two women was influenced very largely by what is perhaps the strongest instinct we possess. Dupré has adduced much evidence in support of the view that a perversion of the instincts lies at the bottom of many of the anomalies of mental development. He said, "Instinctive perversity appears as a form of psychic debility and disequilibrium, and complicates diverse pathological associations, notably anomalies of intelligence, character, disposition, and activity." He recognised evidently that practically the whole of our mental activity may be affected by these disturbances of the instincts. Försterling, too, stated that he had the suspicion that in his case antecedent sexual incidents played a *rôle*, and therefore a further examination of the patient, in the form of a psycho-analysis, must be made.

Juliusberger at the end of his paper on "Fremdgefühl," suggested that "psycho-analysis will show that the source of the disturbance of the organ-sensations must be sought in a disturbance of the psycho-sexual constitution, or the psycho-sexual development of the individual. Psycho-analysis will show the importance of sexuality, and also that organ-sensations are the most important constituent of sexuality. Psycho-analysis of this symptom will show the immense importance of the sadistic and masochistic impulse, of the homosexual or heterosexual component, of the auto- or allo-erotism, and therewith a fresh proof of the dominating influence of the organ-sensations in the psychic mechanism." Some of the statements of my cases illustrate this very clearly. Case 1 complained often of a dizziness. Speaking of one attack of dizziness, she said : "I remember lying down, and feeling I should be justified in doing anything to relieve the tension." She admitted also that these attacks of dizziness occurred frequently after her thoughts had been running on sexual

matters. "I noticed when walking one day that it came after dissatisfying thoughts." And again, "I remember quite clearly feeling disturbed about breakfast time over the sexual feelings in the mill, and I remember trying to throw them off about three p.m.; it was at those times that the dizziness came." Case 2 said, "If I get an emotion I am occupied with thinking as busily, as busily as possible; if I don't have the emotion I am a blank. If I experience an emotion the bodily feeling follows the emotion." "I have had emotion and thoughts, that is life; shortly after I have died, that is a blank. I have faced death, that is as though the size of a being changed from that of a giant to a pin-point."

In both cases, therefore, there was a predisposing factor in the abnormal psycho-sexual development, and in both the breakdown occurred after an emotional shock—the death of a favourite sister in Case 1, and the loss of a friendship in which homosexuality had been a strong link in Case 2. The first symptom of the breakdown in both cases was a failure to recognise themselves, to have control of themselves, an incapacity to recognise and make use of the personality which had been building up during the thirty years of their lives. In other words, there was a dissociation of the consciousness of the personality, and this depended on a disturbance of the apperceptive function. The explanation of this, to themselves, extraordinary condition came later, and in Case 2 two years elapsed before the delusion regarding the re-incarnation occurred to her. At one interview, after having asserted that she had proof of the extraordinariness of her personality, she said in reply to a request to furnish that proof, "I have no proof of the re-incarnation; that was only my explanation." This demonstrated that she felt the changed personality first, and worked out an explanation afterwards. It is possible that her having been on friendly terms with some theosophists, her having read several works on theosophy, and her having been told by a medium that in a former life she had been a man, may have had something to do with the origin of this delusion.

Now, Kutzinski pointed out that the root of the disturbance of the apperceptive function lies in the feelings (*Gefühle*), and with these the organ-sensations are intimately associated. As he said, "Changes in the tone of the ego-feeling (*Selbstgefühl*) lower the reproducing and apperceptive activity, and therefore



the consciousness of the personality." Lugaro, speaking of consciousness, said, "Subjective observation has shown us that the essential character of consciousness—without which we could not comprehend consciousness itself—is the act of establishing relationships between diverse impressions; there is no consciousness without distinction." He mentioned that Tanzi has indicated that if from the subjective point of view the distinctions demand, as a necessary condition, the formation of multiple, precise, and constant relationships between the various sensations, it is necessary, from the objective point of view, that the dynamic processes which form their substratum should present the same multiplicity, precision, and constancy. And therefore the individual stimuli coming from the outside world must be separately conducted to the centre, and combining there, assume the most varied but definite relationships and become intimately united with the accurately localised records left by former processes. And since all the possible and varied symbolic constructions which constitute conscious phenomena result from the grouping together of the elementary distinctions, it is necessary that all the dynamic processes corresponding to the elementary distinctions develop with orderly distribution in an individual centre, and assume there the most varied relationships of combination corresponding to the single groups of distinctions. Upon these dynamic processes so essential for clear distinction, that is, for clear consciousness, depends the affective tone of the sensations and states of consciousness in general. Any disturbance of them, by toxic action or otherwise, will interfere with the psychic functions, and amongst other disorders weakening of sensory attention, and of apperception, and a morbid affectivity may be produced.

Jung, in his "Theory of Psycho-analysis," has replaced the original idea of libido sexualis (Freud) being the most important factor in the production of the neuroses by a libido, which, although it admits the importance of sexual influences, recognises that stimuli from sources outside the sexual must also be considered. The use of the term "energy" in his definition of "libido"—that energy which manifests itself in vital processes and is subjectively perceived, as aspiration, longing, or striving—suggests the importance of the dynamic, energetic processes which form the substratum of psychic activity, and disturbance of which leads to that disorder of the apperceptive function

expressed in the terms, loss of reality, the feeling of not being one's self, and altered affectivity. This affectivity is intimately associated with the organ-sensations—that is, with organic movements which depend on the action of the autonomic and sympathetic systems of the nervous apparatus, and also to some extent on skeletal movements.

To deal with this side of the question would require more time than I have at my disposal, but I hope to return to it in a subsequent paper. I will simply mention that the work of Head on *Certain Mental Changes that Accompany Visceral Disease*, and of Rosenfeld and others on the vasomotor neuroses, have demonstrated that vasomotor disturbances are frequently attended by psychic disorders, and that this is not an accidental occurrence. The vasomotor system may be affected in two ways. Either a disturbance in the sphere of the feeling-tones which accompany psychic activity may be produced through some prolonged irritation or unpleasantness, and lead to a morbid tone—and it must be remembered that morbid stimuli so weak that they give rise to no morbid symptom may exercise a cumulative action, and lead eventually to a secondary permanent change in the sympathetic system—or, as in the experiments of Dr. Orr and myself, a toxin acting directly on the sympathetic ganglia may interfere with their function, and produce secondarily alterations in the central nervous system, alterations in the vessels and therefore of nutrition, and later to degeneration of the nerve-elements. Our experiments have exhibited these alterations in the spinal cord, but that similar morbid effects may occur in the brain will be the more easily understood, since it has been proved that the vessels of the brain are provided with vasomotor fibres and are thus under the control of the sympathetic system.

Up to the present time we have had to rely chiefly on clinical evidence, but I venture to suggest that the changes in the central nervous system following the action of toxins on the sympathetic system, when capsules containing a culture of pathogenic organisms have been placed in the peritoneal cavity, offer strong objective evidence that primary lesions of the sympathetic system may disturb the organ-sensations, and also the dynamic processes, in the central nervous system, and so play an important rôle in producing those mental dis-

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orders in which a change of the personality is a prominent  
symptom.

I have to thank my friend, Dr. David Orr, for much valuable  
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*The Pupil and its Reflexes in Insanity.* By A. H. FIRTH,  
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#### PART II.—PUPILLARY SYMPTOMS IN CERTAIN TYPES OF MENTAL DISEASE.

##### (1) *General Paralysis.*

Progressive general paralysis is remarkable for the frequency,  
multiplicity, and variety of its pupillary symptoms, which  
may often be evident even in the incipient stage of the  
disease.

From the diagnostic point of view the most frequent and the most important of these is the Argyll Robertson phenomenon. The presence of this classic symptom in a patient suffering from mental disorder of a somewhat indefinite nature gives rise to the strongest suspicion that the case in question is one of general paralysis. But reflex-rigidity also occurs in tabes and syphilis; and intercurrent psychoses in the course of these diseases are not uncommon. Berkley (4), however, states that mental disorder, accompanied by signs of tabes, almost always develops into progressive paralysis.

Reflex-rigidity in general paralysis may be unilateral, or, more often, bilateral. The pupils are often medium in size, or even dilated. In cases of paralysis with tabetic symptoms they are usually small. Typical reflex-rigidity is specially frequent in tabetic paralysis. According to Moeli it is found in 84 *per cent.* of the cases (Bumke (8)).

Cases which present, not abolition of the light-reflex but impairment of its activity, while the near-vision reaction is either unaffected or unduly active, are with propriety classed along with those which show the fully developed Argyll Robertson symptom.

The next most important pupillary symptom is absolute rigidity. It may be associated with mydriasis, or, less frequently, with miosis. Absolute rigidity, however, is by no means such a strong indication of general paralysis as the Argyll Robertson symptom, for the former is relatively frequent in conditions such as syphilis, chronic alcohol poisoning, and senile dementia.

The occurrence of ophthalmoplegia interna in general paralysis has been recorded. Bumke thinks that its presence rather indicates syphilitic pseudo-paralysis. Nevertheless, trustworthy observers have described the occurrence of ophthalmoplegia interna in otherwise typical cases of general paralysis, and it must be accepted as a possible symptom (Bevan Lewis (17)).

Bumke (8) has collected statistics on the condition of the light-reflex in general paralysis. From published records of over 3,000 cases he finds that the light-reflex was absent in 45.4 *per cent.*, impaired in 28.3 *per cent.*, and unimpaired in 26.3 *per cent.*

Bach (2) estimates that bilateral loss of the light-reflex is more frequent than unilateral in the proportion of 4 to 1.

LX.

15



Inactivity of the pupil of one side only is seldom persistent, since the other, as a rule, soon becomes affected (Berkley (4)).

The near-vision reaction is active in *77 per cent.* of general paralytics, impaired in *11 per cent.*, and absent in *12 per cent.* (deduced from records of 578 cases given by Bach (2)).

The sensory reflex usually becomes more and more sluggish as light-rigidity develops; when the latter is complete, the sensory reflex is only exceptionally present (Bach). On the other hand, this reaction may be absent while the light-reflex is retained; Hirschl maintains that the sensory reflex usually disappears before the light-reflex (Bumke (8)). Bevan Lewis (16) is of the same opinion.

Pupillary unrest is absent in a large proportion of paralytics in association with reflex or absolute rigidity; it may, however, be absent when the action of the iris is apparently normal in other respects (Bach (2)).

The myotonic reaction is occasionally seen in retrogressing or not completely developed absolute rigidity. In rare cases of incomplete reflex rigidity the neurotonic reaction may be observed.

Exceptionally the light-reflex is found to be present, and the near-vision reaction absent. Bevan Lewis (17) mentions one case of a female paralytic who showed paralysis of accommodation and loss of the near-vision reaction, with only partial impairment of the light-reflex. Wernicke (quot. Laqueur (15)) records a similar case.

The paradoxical reaction is recorded in some cases. Bevan Lewis (17) describes the occurrence in certain cases of general paralysis of an interesting phenomenon to which allusion has already been made. In testing the light-reflex by concentrated light through a bull's-eye condenser, he found that the initial contraction thus induced may be succeeded by a secondary dilatation—the pupil expanding widely in spite of the concentrated illumination. He saw this symptom in *13.6 per cent.* of his cases, and refers it to commencing paralysis of the centre of the third cranial nerve.

Hirschl (quot. Bumke (8)) remarks that such a phenomenon may be an instance of pupillary dilatation caused by a strong sensory stimulus.

Irregularity of the pupils is present in a very large proportion of general paralytics. Corectopia may also be found.

The occurrence of unsymmetrical movement of the iris in response to stimuli has already been mentioned.

Inequality of the pupils is extremely common. The statistics of various writers on this point show marked differences; the proportion of cases in which anisocoria is present varies from 92 *per cent.* to 26 *per cent.* and even lower. Evidently a large allowance has to be made for the personal equation of the observer.

Inequality may occur whether the light-reflex is present, absent, or merely sluggish. Bevan Lewis (17) found that out of 73 paralytics showing loss of the direct and consensual light-reflex in both eyes, 34 had unequal pupils; out of 71 other paralytics in whom the light-reflex was intact or only sluggish, 33 showed a notable inequality of the pupils.

Changes in the relative size of the pupils, their outline and their position with respect to the centre of the cornea are quite common. Such variations may take place gradually from day to day, or comparatively suddenly, without any apparent relation to the other symptoms of the patient; or they may be observed to accompany epileptiform or apoplectiform seizures.

See-saw pupils are occasionally found in general paralytics, either associated with unilateral hippus or depending on unilateral loss of the light-reflex, or in the form of alternating mydriasis.

Hippus is sometimes observed in general paralysis, especially in association with seizures.

*The incidence of pupillary symptoms in the different stages of general paralysis.*—Different writers lay stress on different isolated symptoms which may be the sole evidence of disturbance of the pupillary mechanism in cases of commencing general paralysis, and which may be regarded for the most part as forerunners of the more definite and typical ocular phenomena. Among these early symptoms are the following:

- (1) Irregularity of the pupil.
- (2) Unsymmetrical movement of the iris (Salgo, quot. Piltz (22)).
- (3) Inequality of the pupils.
- (4) Hippus.
- (5) See-saw pupils (alternating mydriasis).
- (6) Absence of pupillary unrest (Bach (2)).
- (7) Loss of sensory reflex.

(8) Sluggishness of the light-reflex.

(9) Loss of the consensual light-reflex.

The views of Salgo and Piltz (22) on the significance of irregularity of the pupil and irregular movement of the iris have already been mentioned. Bevan Lewis (17) records a case in which both pupils were equal and somewhat dilated and still reacted to light, but in which hippus was present in the right eye.

Bevan Lewis (16) regards loss of the sensory reaction as a symptom of almost constant occurrence in early cases of general paralysis. Berkley (4) has observed in a considerable number of cases that loss of the consensual light-reflex preceded loss of the direct light-reflex. The presence of this symptom, when combined with mental phenomena, has led him to make a tentative diagnosis of general paresis.

The actual diagnosis of a case presenting only one of the various early pupillary symptoms must depend on the other clinical features; the observer, at any rate, has received warning of the possibility of further developments.

In individual patients no particular connection can be established between the nature and degree of impairment of the pupillary reactions and the stage of the disease. Cases occur in which the ocular symptoms are marked from the first time that the patient is brought under observation. Spastic miosis has been observed to antedate the full development of the disease by ten years (Thomsen, *quot.* Bach (2)). On the other hand, there are comparatively advanced cases to be found in which pupillary symptoms are not well marked.

An interesting series of observations has been made by Marandon de Montyel (18) on the state of the light-reflex in 140 cases of general paralysis, from the commencement of the disease till death. Of these, 50 died in the first stage, 36 in the second, and 54 in the third. Out of the whole number, the light-reflex was always normal in 24 *per cent.*, always abnormal in 17 *per cent.*, and subject to change in 58 *per cent.*

The condition of the light-reflex in the patients during the different stages is shown by the following table:

Light-reflex.	Patients in Stage 1 ( <i>per cent.</i> ).	Patients in Stage 2 ( <i>per cent.</i> ).	Patients in Stage 3 ( <i>per cent.</i> ).
Always normal .	42	29	3
Subject to change .	32	35	11
Always abnormal .	24	34	85

In the first stage 6 *per cent.* showed exaggeration of the light-reflex in both eyes; 10 *per cent.* showed diminution or abolition of the reflex in one eye. Of the 54 patients who survived till the final stage, every one showed some abnormality at one time or another.

We may conclude that impairment of the light-reflex is relatively much more common in the advanced stages of the disease.

In the remissions which sometimes occur in the course of general paralysis, a retrogression of the Argyll Robertson symptom has been observed by various authorities. For instance, Tanzi (24) says that he has been able to prove that the immobility of the pupil may disappear and reappear in the course of general paralysis, as it has been observed to do in tabes dorsalis. Bumke (8) records one case of retrogression of the already almost extinguished light-reaction in a paralytic during a remission. Dana (28) records one or two cases of what he calls "pre paresis," in which complete Argyll Robertson pupils regained their activity after antiluetic and hygienic treatment.

When once the Argyll Robertson pupil is fully developed, return of the light-reflex is considered by Bach and Bumke to be an extremely rare occurrence. It is possible that some of the recorded instances have been due to faulty observation or inaccurate diagnosis. For example, in pseudo-paralysis due to cerebral syphilis or certain chronic intoxications, immobile pupils have sometimes been found to recover their activity, in association with improvement of the other symptoms.

Miosis, when present, is more often found in the earlier stages of general paralysis, and mydriasis in the later stages. An initially small pupil may gradually become dilated as the disease progresses. Occasionally marked mydriasis may be present from the beginning. Miosis is apt to occur during the irritative phase, mydriasis in the terminal stage of exhaustion.

In the seizures—epileptiform and apoplectiform—which are not uncommon, the pupils as a general rule show absolute rigidity; and variations in their size, form, and situation may take place. Frequently there is mydriasis, which may be marked, even where spastic miosis has previously been found. In other cases there is absolute miotic rigidity.

Hippus and see-saw pupils have been observed in association with seizures.



Table VI (pp. 262-7) gives the records of my observations on 66 cases of general paralysis.

One case, No. 67 (p. 267), is probably only a pseudo-paralytic. The patient is of advanced age—æt. 69—suffers from arterio-sclerosis, and has symptoms indicative of tabes dorsalis. He shows a paradoxical light-reaction in each eye, both to daylight and to the electric light from a hand-lamp. Both pupils dilate slightly, usually about  $\frac{1}{4}$  mm.; they resume their original diameter when the light is removed. There is no consensual reaction. The sensory reflex and near-vision reaction are both absent. There is no unrest visible to the naked eye. Both pupils are small and irregular; the right is  $\frac{1}{4}$  mm. larger than the left. There is marked internal strabismus, both eyes being amblyopic. I have not come to a definite conclusion about this case, but have included it here provisionally.

The 66 cases of general paralysis vary in age from fifteen to sixty-six. The average pupil-diameter is 4.4 mm.

In every case the condition of the pupils showed some departure from the normal.

Anisocoria was found in every case but 5; in these only one measurement is recorded.

Both pupils showed irregularity except in 6 cases, in which only one record of the pupil-outline is given; of the 6 exceptions, in 3 one pupil was irregular, in 3 both pupils were regular.

The first 24 cases show the *Argyll Robertson symptom*, 17 in both eyes, 7 in only one eye—that is, 36 *per cent.* of the whole.

The average pupil diameter is 4.1 mm. Only 5 cases had a pupil diameter of less than 3 mm., and 7 cases had a pupil diameter of over 5 mm. at one time or another. Anisocoria is the rule, the difference being usually not more than  $\frac{3}{4}$  mm.; 5 cases showed a difference of 1 mm. or over. Equal pupils are recorded at one time or another in 8 cases. Change in the size-relation is shown by 14 cases, of which 3 show reversal (Nos. 4, 9, 21).

Temporary reappearance of the light-reflex is shown in Nos. 4, 19, and 24.

Loss of consensual reaction precedes loss of the direct light-reflex in Nos. 13 and 18.

The sensory reaction was usually absent when there was no light-reflex ; but exceptions are found in Nos. 2, 4, 8, 12, and 17.

Loss of sensory reaction preceded loss of light reaction in Nos. 12, 13, and 19. In one case slight unrest was present though the sensory reflex was absent—No. 18.

Alteration in the outline of the pupils is recorded in every instance where there are repeated observations—for example, the left pupil in Nos. 14 and 16.

The next 15 cases (Nos. 25 to 39) show *bilateral impairment of the light-reflex, with activity of the near-vision reaction*. These are cases of bilateral incompletely developed reflex rigidity, and amount to nearly 23 *per cent.* of the whole. The average pupil-diameter is 4.7 mm.

Anisocoria is very common. Equality of the pupils is recorded in 5 cases, of which 2 had only a single measurement. Change in size-relation is seen in 8 cases.

In No. 30 the absolute pupil-rigidity present on admission may be ascribed to alcoholic poisoning. In No. 33 pupil-rigidity and corectopia appeared in a seizure followed by coma, which ended fatally.

In Nos. 38 and 39 renewed activity of the light-reflex followed a period of sluggishness. Loss of the sensory reflex at a time when the light-reflex is not yet extinguished is shown by Nos. 27, 29, 30, 33, 34, 35, and 37 ; in the last of these the sensory reflex was lost before the light-reflex began to be affected.

Change in the outline of the pupils is shown by several records.

Altogether, then, 39 cases out of 66 present the Argyll Robertson symptom, either complete or incomplete—that is, 59 *per cent.*

*Absolute rigidity of both pupils* is shown in five cases (Nos. 40 to 44) ; *unilateral absolute rigidity* in one case (No. 45). If No. 44, a case of juvenile general paralysis, be excluded, the average pupil diameter is 4.1 mm. Marked inequality of the pupils was present in Nos. 40, 42, and 45. No. 45 also showed marked variation in the size-relation of the pupils, and in their outline. Irregularity of both pupils is the rule. The corectopia in No. 44 may be of congenital origin. No. 45 gives the picture of the Argyll Robertson symptom on the right side, and absolute rigidity on the left side.

Nine *per cent.* of the cases, then, show absolute rigidity.

Nos. 46 and 47 are cases of *incompletely developed bilateral absolute rigidity*. No. 46 has shown gradually increasing ptosis on the left side. No. 47 is a case with a history of lead-poisoning, in which general paralysis has developed.

Both cases show changing irregularities.

Complete or incomplete absolute rigidity was therefore present in eight cases ; that is, in 12 *per cent.*

Four cases, Nos. 48 to 51, showed *impairment of the light-reflex in one eye*, in No. 50 as a transient alternating symptom only. Nos. 50 and 51 show loss of the sensory reflex.

In case No. 52 the patient resisted further examination. Both consensual reflexes were absent, though the direct light-reflexes were active.

Thirteen cases, Nos. 53 to 65, showed *no alteration of the light-reflexes*, beyond sluggishness of the consensual reflex in one eye in No. 58. The average pupil diameter is 5 mm.

Loss of the sensory reflex was found in 5 cases, but in 2 only as a temporary symptom. The sensory reflex was diminished in 5 others. In every case there was inequality of the pupils. Both pupils showed irregularity in all but No. 65, of which only one record is available. Changes in the pupil-outline were noticed in nearly every case.

Altogether 14 cases showed no impairment of the direct light-reflex in either eye—amounting to 21 *per cent.* of the whole.

No. 66 was a case of juvenile paralysis, in which double optic atrophy, and *double amaurotic rigidity* were present. The loss of the sensory reflex, however, rather indicates the superposition of a condition of absolute or perhaps reflex rigidity.

The figures and percentages arrived at from my records are not of much value for statistical purposes. An investigation of a much larger number of cases, conducted on the lines followed by Marandon de Montyel (18), would be required in order to give any noteworthy results. My cases serve to illustrate much of what has been recorded in the literature and already summarised in these pages.

The records of pupillary unrest in the tables are incomplete. They are estimated by the naked eye only. There was no Zeiss binocular microscope available, and I did not find a corneal loupe of much advantage for the examination of pupillary unrest, chiefly owing to its small field.

(2) *Syphilitic Insanity.*

Marked pupillary symptoms are found in many cases of insanity due to cerebral syphilis, though, on the whole, they are not so frequent as in general paralysis. The clinical picture of this type of mental disease may closely resemble that of general paralysis, giving rise to one form of pseudo-paralysis.

Absolute rigidity of the pupils may be found in cerebral syphilis, usually in both eyes. Miosis in this condition is uncommon.

Ophthalmoplegia interna also occurs, more often on one side only, along with mydriasis. Amaurotic rigidity may be developed from primary or secondary affections of the optic nerve or tract, or the chiasma.

The Argyll Robertson symptom is seldom found in uncomplicated cerebral syphilis.

Bumke (8) maintains that when reflex or absolute rigidity persists as an isolated symptom for a considerable time, the case in question is more probably one of general paralysis or tabes. If other symptoms develop, such as transitory or permanent ptosis, ophthalmoplegia externa, or paralysis of the abducens, cerebral syphilis is decidedly indicated.

Inequality and irregularity of the pupils are common in cerebral syphilis. See-saw pupils may occur. The paradoxical light-reflex, and the neurotonic and myotonic reactions have all been observed in this condition.

Reappearance of the light-reflex after it has been lost has been described, usually following antisyphilitic treatment. Temporary reappearance of the light-reflex may be noticed when the patient is kept for some time in a dark room; this phenomenon is regarded as a symptom of progress towards recovery (Bach (2)).

In Table V (p. 262) seven cases of syphilitic insanity are recorded.

No. 1 was a case of congenital syphilis; the patient was *æt.* 17, and he died from acute nephritis. No evidence of general paralysis was found on *post-mortem* examination. The pupils showed no abnormality, except that they differed slightly in size. No. 2 was a case of temporary excitement commencing two months after the primary lesion. Both pupils were slightly



irregular, but otherwise normal. The patient—æt. 19—was discharged recovered.

Nos. 3, 4 and 5 may eventually prove to be general paralytics. No. 3 shows marked inequality of the pupils, and changing irregularities. No. 4 has irregular unequal pupils, and sluggishness of the direct and consensual light-reflex in the right eye. No. 5 had diminished sensory reaction, which has regained its activity. There is a certain degree of corectopia in the left eye, which may be congenital.

No. 6 was a case of temporary confusional insanity in a man æt. 42. Except for diminished sensory reaction the pupils were normal. No. 7 has shown inequality of the pupils, and absence of both consensual reflexes for twenty-two years. During that period the patient—a woman—has suffered from various syphilitic manifestations at different times. She has had a macular skin eruption, peripheral neuritis with temporary left ptosis, and repeated ulceration of the leg. All these conditions cleared up under anti-syphilitic treatment. Clinically she is not a general paralytic. The pupils are circular, the direct light-reflexes are present, but the sensory reflex is absent in both eyes.

### (3) *The Toxic Psychoses.*

(a) *Alcoholic insanity.*—In the “physiological intoxication” of healthy persons there may be no disturbance of the pupil-reflexes. In the stage of exaltation the pupils are often dilated. Sometimes an increased activity of the light-reflex, and the sensory and psychical reflexes has been observed (Hübner, quot. Bach (2)). In persons intolerant of alcohol the reflexes may show diminished activity. The pupils in advanced intoxication may be small or large. Gudden observed sluggishness, and even complete loss of the reactions in severe intoxication with insensibility (Bach (2)). These symptoms disappeared as consciousness returned.

In idiots and degenerates Vogt found that a dose of 40 c.c. of arrack or rum in water produced change in the pupil-reactions in about one-third of his cases; usually the light-reflex became sluggish.

As Stoddart (24) remarks, not every case of mental disease with a history of previous alcoholic excess is a case of alcoholic

insanity. Turner (26) would limit the application of the term "alcoholic insanity" to cases in which there is alcoholic neuritis.

For our present purpose the psychoses which directly or indirectly originate from long-continued alcoholic excesses are grouped together. Most of the patients suffer from a congenital instability of the nervous system, and a deficient power of resistance to toxic influences. We should expect such cases, if any, to present symptoms of disorder or degeneration of the nervous system after prolonged alcoholic poisoning.

In chronic alcoholics the pupils are frequently found to be of relatively small size, rarely dilated; their reactions are proportionately sluggish, and of small amplitude. The degree of impairment of the reactions seems to be proportional to the severity of the toxic process (Bach). The average quickness of response to light is below the normal. In very rare cases the disturbance is unilateral.

The light-reflex alone may be diminished, or the reactions to near-vision and sensory stimuli may be implicated as well. The myotonic reaction is sometimes observed.

In exceptional cases the Argyll Robertson symptom has been recorded. Moeli (quot. Bumke (8)) says that in very rare cases this symptom is found fully developed and lasting for some time. Whether it really depends on alcoholic excess or not is not quite certain. He allows that a transitory sluggishness may be caused in this way. He has also seen frequent temporary relaxations of the iris, disturbances of the convergence-reaction, and the retention of activity only in isolated portions of the iris. Raimann (quot. Bumke) describes ten cases of alcoholics presenting complete loss of light-reaction; in some of the cases absolute rigidity supervened, but in every instance the light-reflex finally returned.

Bertozzi (5) believes that permanent alterations of the pupil are frequently found in insane patients suffering from the effects of chronic alcoholism, especially permanent spastic miosis. Bumke (8) concludes that the most frequent pupillary symptom of alcoholism is a general sluggishness of the reactions, and that absolute rigidity is comparatively rare; further, that in certain stages of development or retrogression of the latter symptom the light-reflex may be so much more affected than the convergence reaction as to simulate the Argyll Robertson pheno-

menon. He also would refer some of the cases of apparent reflex rigidity to amaurosis following optic neuritis. Diminution of the light-reaction is recorded in 2.5 *per cent.* of the cases, and inequality of the pupils in about the same proportion. On the whole, changes in the innervation of the iris are found in 6 *per cent.* of the cases, and they are usually of a temporary nature.

In *delirium tremens* the pupils are at first contracted, but they usually become dilated as the disease progresses (Stoddart (24)). A sluggish reaction of the pupil to light, and even complete Argyll Robertson pupil may be found. This sign, however, disappears on recovery (White (27)). In *mania à potu* miosis and anisocoria may be observed.

In Table I (p. 260) are collected ten cases of *temporary mental disorder of alcoholic origin*. The patients had all taken alcohol in excess for long periods, and they presented mental symptoms characterised by marked confusion along with varying degrees of excitement. They were all males; the age varied from thirty-four to sixty. The average pupil diameter was 5.1 mm. Two cases showed equality of the pupils, 2 had slight inequality, and in 6 the pupils differed by  $\frac{1}{2}$  mm. or more. In only one case were both pupils circular; 4 showed irregularity of one pupil, and the remaining 5 had bilateral irregularity, mostly of slight degree.

Three cases showed diminished direct and consensual reaction to light; 2 had impaired sensory reflexes.

On the whole, there was deviation from the normal condition of the pupil in all but one case, though the abnormalities were mostly of slight degree. In the majority of the patients there was some irregularity and inequality of the pupils.

In *polyneuritic alcoholic insanity*, which is the most common variety of Korsakow's psychosis, pupillary disturbances are not infrequent, and they usually vary in intensity from day to day.

Inequality of the pupils, sluggishness of the reactions to light and convergence, and even transitory Argyll Robertson pupil, may be observed. Turner (26) records the condition of the pupils in 68 cases of this disorder. Anisocoria was present in 26.4 *per cent.*; sometimes the inequality on different days was subject to alternation, first one pupil and then the other being the larger. In 34.2 *per cent.* the pupils either reacted very slightly and sluggishly to light, or were rigid; but this condition in most cases was only temporary. In eight

cases the pupils appeared at one time quite rigid to light; in at least six of these the condition was undoubtedly temporary.

Lauder Brunton (7) has recorded that in a number of cases of alcoholic neuritis the reaction of the pupil to light was rapid and extensive, while the contraction on accommodation was slight and sluggish or entirely wanting; in one or two cases he observed dilatation instead of contraction with accommodation.

In Table II (p. 260) I have recorded two cases of polyneuritic alcoholic insanity. The patients were *æt.* 28 and 29 respectively. The average pupil-diameter was 5 mm. Both cases exhibit change in the size and size-relation of the pupils, as well as in their outline. In both cases the sensory reflex was absent on admission; afterwards the reflex appeared again, but it was diminished in activity. The light-reflex in the second case was sluggish, but later it returned to the normal.

In *alcoholic pseudo-paresis* pupillary inequality is not uncommon; sometimes the light-reflex is absent, with slowness of reaction to near vision. The symptoms usually undergo improvement on removal of the poison, and they may more or less completely disappear (White (27), Berkley (4)).

Table III (p. 261) deals with the pupillary records of 26 cases of *chronic alcoholic insanity*. The patients have taken alcohol to excess for many years, and have sustained irreparable damage to the cerebral cortex, which is expressed symptomatically by the dementia from which they all suffer in greater or less degree. Cases Nos. 2, 4, 7 and 8 presented the picture of alcoholic pseudo-paresis.

The age varies from thirty-six to sixty years. The average pupil diameter of all the cases is 4.4 mm. In 8 cases the pupils were equal, in 9 there was slight inequality, and in 9 the difference in size was more marked. Nos. 6, 11 and 14 show change in size-relation of the pupils.

Both pupils were circular in 8 cases; slight irregularity of one pupil is present in 3 cases, and of both pupils in 15. In 4 cases change in the form of the pupils is recorded. Eight cases show diminished reaction to light in both eyes; in No. 11 the formerly sluggish light-reflexes regained their activity. In 3 cases the direct and consensual reflexes are sluggish in one eye. In No. 19 there is loss of the consensual reflex in one eye.



In 15 cases the light-reflexes were normal. In 5 cases the near-vision reaction was diminished, and partial recovery is shown in No. 14.

Absence of the sensory reflex was observed in 6 cases; the reflex was present, but diminished in 11; present and active in 6 cases (out of 23). In one case the sensory reflex was absent, but returned (No. 14); in another it was diminished and then disappeared (No. 6). In 2 cases the condition of the pupils was practically normal. In 7 cases diminution or loss of the sensory reaction was the only reflex symptom. In 5 cases no abnormality of the reflexes is recorded; and in 5 cases all the reflexes were affected.

On the whole, we find rather small pupils, as a rule presenting no marked inequality, but showing in most cases some irregularity of outline. Both the anisocoria and the irregularity may be subject to variation from time to time. The light-reflex (direct and consensual) is usually present, but often sluggish. Occasionally the near-vision reaction may be diminished as well. Diminution or loss of the sensory reaction may be the only disturbance affecting the pupil-reflexes.

(b) *Insanity from lead-poisoning.*—In this condition there may be slowly reacting and unequal pupils, associated with optic neuritis. In some cases optic atrophy supervenes, with amaurotic rigidity. The poison may also directly attack the nerves of the interior muscles of the eye, especially the sphincter pupillæ (Bach (2)).

Clinically some of the cases resemble general paralysis (plumbic pseudo-paresis), and true general paralysis may be developed in patients who have suffered from plumbism.

Table IV (p. 262) contains one case of insanity from plumbism. The patient's age on admission was 65. The pupils are unequal, and show irregularity which has changed in character. The light-reflex (direct and consensual) and the sensory reaction have become diminished. Unrest is not now visible to the naked eye. The near vision remains active. The advanced age of the patient is a complicating factor.

(c) *Less frequent toxic conditions.*—In chloral-hydrate poisoning, which sometimes produces insanity, there may be miosis, with loss or impairment of the reaction to sensory and psychical stimuli. These phenomena disappear as the drug is eliminated.

Insanity from morphine: Miosis is present in the early

stages, mydriasis later, with sluggish reaction of the pupils (Berkley (4)). According to Bumke (8), the light-reaction may be present, or the pupils may react sluggishly or not at all to light. The reaction to sensory stimuli is diminished or abolished, but the reaction to convergence is present. Cases showing contracted fixed pupils have, however, been described, Uthoff (quot. Bumke) states that the light-reflex is never quite abolished, unless morphinism is associated with some other factor (for instance, in physiological old age).

If the administration of opium or morphia be stopped, or even if the dose be markedly diminished, mydriasis may occur, along with increased activity of the pupil (Bumke).

Insanity from carbon-bisulphide poisoning: In this condition unequal and slowly reacting pupils have been described, and in some cases, wide dilatation and absence of the reaction to light (Berkley (4)).

A pseudo-paresis uræmica has been described, in which the pupils may either be miotic and non-reactive, or widely dilated, regular, and slowly reactive to light and accommodation (Berkley).

In pseudo-paresis diabetica—a rare condition—the pupils are usually unequal, reacting to light and accommodation, though unequally (Berkley).

Bromide of potassium given repeatedly or in large doses gradually produces dilatation of the pupils, and sluggishness of their reactions, including the galvanic reflex (Bach (2), Bumke (8)).

This should not be forgotten in the examination of epileptics for pupillary symptoms.

Insanity from bromide poisoning is recorded. A delirious form has been described by Casamajor (9), in which irregular, unequal, sluggishly reacting pupils may be found.

#### (4) *Insanity with Epilepsy.*

The pupillary symptoms are separable into two groups—those which are associated with fits, and those which are found in the intermediate periods.

In general, during an epileptic fit the pupils are large and irresponsive to light or sensory stimuli. It is quite exceptional for the pupil to preserve its reaction to light and sensory stimuli throughout the whole course of a fit.

A marked transitory contraction of the pupils is often observed at the commencement of a fit ; this is also the case in animals thrown into convulsions by the administration of creatinin.

In the tonic stage the pupils are dilated and fixed.

In the clonic stage as a general rule they still remain dilated and fixed. Occasionally, however, hippus is observed, consisting in convulsive movements of the iris which take place at irregular intervals—it may be only once in a period of 1 or 2 seconds, or in close succession ; the pupil contracts to a medium size, rarely to a marked degree of miosis, and almost at once dilates again to its original size. These variations in diameter are independent of the movements of the eyeball, and the pupil remains irresponsive to light. Anisocoria, elliptic pupils, and corectopia are occasionally found. Distorted, markedly irregular pupils are never seen in genuine epileptic fits (Bumke (8)). In the period of stertor which usually follows a fit, in some cases the pupils are fixed, in other cases they react. In the deep sleep which may follow a fit, fixed contracted pupils may be found (Bach (2)). As a rule, in post-epileptic stupor the pupils show no marked deviation from the normal. Bumke records that in two epileptics in this stage, he found the pupils markedly dilated, reacting with convergence and on strong illumination ; the sensory reflex was absent, and the sensitivity of the galvanic reflex was diminished.

Wassermeyer (quot. Bach (2)), found absence of pupillary unrest as an occasional symptom in post-epileptic stupor, the light-reflex at the same time being preserved.

In *status epilepticus*, and epileptic coma pupil-rigidity is the rule. Exceptionally the light-reflex may be retained in coma (Oppenheim, quot. Bumke (8)).

Bumke investigated the state of the galvanic reflex in epileptics as soon as the light-reflex was definitely restored after a seizure. He found that the sensitivity of the iris to galvanic stimuli was much increased at this stage.

*In the intervals between seizures*, the condition of the pupils may present several interesting features. A certain degree of mydriasis is often found, but the administration of bromides may give rise to fallacy here. Anisocoria is not uncommon ; it is usually transient, or it may alternate with equality of the pupils.

Fuchs (quot. Bumke (8)) concludes from a photographic analysis of the pupillary reactions in seven cases that the light-reflex in epileptics is characterised by an unusual activity, both in quickness of response to stimulation, and in amplitude of the movements of the iris.

Pupillary unrest is usually present, but in demented cases diminished or absent (Wassermeyer, quot. Bach (2)).

The sensitivity of the galvanic reflex was found to be increased in six cases examined by Bumke. The ratio between the intensity of current necessary to cause the sensation of light and that necessary to produce reflex pupil-contraction was 1 : 1.25. In healthy subjects he had already found this ratio to vary between 1 : 1.50 and 1 : 4.0.

Albrand (1) has observed that the state of the pupils in epileptics may show considerable variation from time to time; their reactions may be now sluggish, now unusually brisk; and temporary oval or elliptical distortion may occur. The more marked transient anomalies are rare, and are found only among demented patients.

Epileptics, especially demented epileptics, on waking from physiological sleep, may show a transient anisocoria; on one day the right pupil may be the larger, on another day the left; there may be irregularity of outline and corectopia. The pupils may already be unequally contracted in sleep, and they may not become equal for a considerable time after waking. There may be an unusual slowness in assuming or recovering from the initial dilatation on waking; one pupil may lag behind the other in contracting to the habitual medium size, so that a temporary anisocoria may be caused (Albrand (1)).

Eccentricity of the pupil is occasionally found in epileptics, persisting whether the pupil is contracted or dilated. Negro (20) has also observed it as a transient condition (functional corectopia) in many epileptics under examination in a dim light, when the accommodation is relaxed. The corectopia is seen to alter after a short time, especially in cases of hippus. The eccentricity disappears when the pupil contracts on exposure to light, or in near vision; also on the local application of a miotic, or a weak solution of cocaine. The symptom was present in from 8 to 10 *per cent.* of Negro's epileptic cases, and only very rarely among non-epileptics.

Table VII (p. 267) shows the condition of the pupils in  
LX. 16



35 cases of *acquired insanity with epilepsy*, aged from twenty to sixty-seven.

The average diameter of the pupils of the cases below the age of sixty is 4.9 mm. The average pupil diameter of 9 cases before treatment with potassium bromide was 5.1 mm. The average pupil diameter of 20 others was 4.8 mm. (Cases over the age of 60 are excluded.) It may be concluded that the effect of ordinary bromide treatment upon the pupil diameter of epileptics is negligible. (The average dose given is 30 gr. twice daily.) Sixteen cases have equal pupils, 8 show a trifling difference, and 10 show a difference in size of  $\frac{1}{2}$  mm. or more.

In 17 cases both pupils are circular; in the remaining 18 there is irregularity, usually in both eyes and of slight degree. In one case a change in the form of the pupils from circular to oval is recorded.

One case showed diminution of the direct and consensual reflexes in both eyes.

Another case (No. 3) has no direct or consensual reaction to light in the left eye. The sensory reflex is also absent in both eyes. A satisfactory explanation of these symptoms has not been reached.

In 33 cases the direct light-reflex was active in both eyes.

In all 5 cases show loss of the sensory reflex, and 9 cases show diminution.

On the whole, the most common symptoms are irregularity and inequality of the pupils. Loss or impairment of the sensory reflex occurs in an appreciable proportion of the cases, but otherwise the reflexes are not as a rule impaired.

Table VIII (p. 268) gives the results of the examination of the pupils in 19 cases of *imbecility with epilepsy*. The age varies from 7 to 49. The average pupil-diameter is 5.3 mm. The average diameter in 8 cases before bromide was administered proves to be 5.6 mm., but the average age of these is 24, as against 28 for the whole series. Here again the effect of bromide treatment on the pupil-diameter appears to be negligible.

The pupils are equal in 13 cases, unequal in 6; 15 cases have circular pupils in both eyes; 3 cases have both pupils irregular; 1 case has one pupil irregular.

One case shows diminished consensual reaction. Four

cases show diminished near-vision reaction. This is probably due to lack of the power of full convergence associated with congenital deficiency of intellect.

In 3 cases absence of the sensory reflex is recorded, in 5 it is diminished.

On the whole, inequality and irregularity are not quite so common as in the last group, and the average pupillary diameter is slightly greater.

It should be stated that all the observations in Tables VII and VIII were made in the intervals between fits, with the patients in their usual average mental condition.

#### (5) *Imbecility and Idiocy.*

The light-reflex, and near-vision reaction are usually unimpaired in imbeciles. In a very small percentage of cases the light-reflex is diminished.

Bumke found that the psychic reflex was often absent, but the reaction to painful stimuli was seldom altogether wanting. Out of 19 cases Hübner found both the psychic and the sensory reflex present in 8, absent in 2 cases of low-grade type; one was a cretin girl. Wassermeyer observed loss of the psychic reflex and of pupillary unrest in 1 out of 6 cases, where the patient was a low-grade idiot (Bach (2), Bumke (8)). Koenig (14) observed marked pupillary anomalies only thirteen times in ten years, during which period he had examined several hundred imbecile children. One case showed "springende Mydriasis" at irregular intervals, in association with slight post-neuritic optic atrophy; at times the pupils were equal; the reflexes were active. In another case the right pupil reacted sluggishly to light (directly and consensually), and was rather longer than the left. The left eye was healthy. Congenital syphilis was excluded in both these cases.

The other 11 cases showed either absolute or reflex rigidity, complete or incomplete, in one or both eyes. Only in one of these could syphilitic heredity with all likelihood be excluded. Five of them died from general paralysis, one from cerebral syphilis. Koenig distinguishes three clinical groups of cases among those with a history of parental syphilis: (1) Non-paralysed idiots; (2) children suffering from infantile cerebral

palsy proper ; (3) juvenile general paralytics. Pupillary abnormalities may be present in any group ; they are the rule in general paralysis, and occur in many cases of cerebral syphilis ; they are the exception in infantile cerebral palsy, and still more so among the non-paralysed idiots.

Malformations of the iris, which give an irregular form to the pupil, are not uncommon with idiots (Ireland, *Mental Affections of Children*). Coloboma iridis and corectopia may be found.

In Table IX (p. 269) I have recorded the condition of the pupil in four cases of "*higher-grade*" *imbecility*, aged from nineteen to forty-seven. Average diameter 4·8 mm. The pupils were unequal in one case ; one other case had both pupils irregular, and one showed irregularity of the left pupil. The sensory reaction was sluggish in 2 cases.

In Table X (p. 269) 10 cases of *imbecility of ordinary grade* are recorded. Their ages vary from nineteen to forty-one. The average pupil-diameter is 5·5 mm. The pupils were equal in 6, slightly unequal in 1, and they differed by  $\frac{1}{2}$  mm. or more in 3 cases.

In 4 cases both pupils were circular, in 5 both were irregular, and 1 case had irregularity of one pupil. In No. 9 there is double congenital irregularity of the pupils, with diminution of the direct and consensual light-reflexes, and absence of sensory reaction in one eye ; the pupils are also unequal.

In 6 cases the sensory reaction is diminished ; in 1 it is absent in both eyes. One case shows diminished near-vision reaction in both eyes ; in another the reaction was sluggish in the left eye.

In Table XI (p. 269) there are 8 cases of *idiocy*, aged from eighteen to forty-five. The average diameter of the pupils is 5·7 mm. The pupils are equal in 4 cases, slightly unequal in 1, differing by  $\frac{1}{2}$  mm. or more in 2. Both pupils are circular in 6 cases, one pupil slightly oval in 1 case. Four show diminished sensory reaction. The light-reflex is active in all the cases.

In Tables IX, X, and XI there was no case which presented any marked degree of corectopia.

In the majority of the 22 cases in these three tables the pupils were equal. In 9 cases there was irregularity of one or of both pupils, and in a few the irregularity was marked. On the whole, a tendency to sluggishness of the sensory reaction is apparent.

The pupil-diameter tends to be larger in the lower grades than in the higher grades of mental deficiency.

(6) *Hebephrenia, Katatonia, and Paranoia.*

Dementia præcox is the name given by many alienists to a group of psychoses which have their onset as a rule between the ages of fifteen and thirty years. They are characterised by a marked tendency towards early dementia, though the progress of the disease may be interrupted by remissions. Originally Kraepelin grouped under this head three forms of mental disorder, namely, hebephrenia, katatonia, and paranoid dementia. Other alienists have added further subdivisions, such as "simple primary dementia," and "mixed forms."

The opinion of L. C. Bruce (6) is that hebephrenia, katatonia, and paranoia are entirely separate diseases, and should be sharply distinguished from one another. With regard to paranoia, he remarks that as a rule there is little mental enfeeblement, except in a few of the adolescent cases who deteriorate rapidly in mind and become demented and incoherent. We may regard the latter group as corresponding to Kraepelin's dementia paranoides.

Unfortunately writers on the pupillary symptoms of dementia præcox do not always define which disease they are dealing with. Hence many of their records are unsatisfactory from the present point of view (as, for instance, in a paper by Tyson and Clark (29)).

Piltz (22) occasionally found in katatonic patients irregularity of the pupils, changing in form from day to day; transient sluggishness of movement of various portions of the iris; eccentricity of the pupil, subject to daily variation; varying degrees of anisocoria; mydriasis alternans; and increase in the activity of the light-reflex and orbicularis reaction.

Albrand (1) saw mydriasis with absolute rigidity in one case of dementia præcox in a state of katatonic excitement, as a temporary phenomenon. He quotes Meyer, who found "katatonic rigidity" of the pupil only once in 400 cases of dementia præcox. He concludes that absence of the light-reflex is quite an exceptional occurrence in that disease. Much more frequent symptoms he finds to be the following: Marked anisocoria, with a difference of from 1 to 3 mm.; occasional irregularities



of outline, usually in one eye only, with variations in the briskness and amplitude of the movements of the iris; increase in the degree of anisocoria, and sometimes change in the form of the pupils as temporary phenomena in association with outbursts of excitement. The patients whom he examined were mostly in the stage of terminal dementia. He very rarely found see-saw pupils. Occasionally slight corectopia was observed in katatonic cases.

Albrand also points out that anisocoria is rendered more evident when the pupils are examined under diminished illumination. In some cases in which the pupils are equal in ordinary daylight inequality can be observed on examination in a subdued light.

Bumke (8) investigated 33 cases of dementia præcox, of whom 9 suffered from hebephrenia, 22 from katatonia and 2 from paranoid dementia. He used a Westien corneal loupe, and an illumination of seven metre-candles. There was no distinction between the three classes in respect of the size of the pupils; the average diameter was 6.5 mm. An unusual variation in the size of the pupils was observed six times; for instance, diameters of 8, 5.5, and 7 mm. respectively were found on three successive days in one case under similar conditions. Anisocoria was present in three cases. The near-vision reaction was normal, and the sensitivity of the galvanic pupil-reaction was high.

In the 9 cases of hebephrenia the psychical reflex and pupil-unrest were lost when the disease had lasted for some time and had led to a certain degree of dementia. In 2 cases these reactions were present, but only in the initial stage of the disease. In no case did they reappear when once lost. The sensory reflex was present only in 2 cases, which were examined at an early stage. In one case reappearance of the sensory reflex occurred along with marked mental improvement.

In the 22 cases of katatonia the psychical reflex and pupil-unrest were never present. In 6 cases a slight dilatation was obtained from painful stimuli, but only in the early stage of the disease or during a remission. An unusual activity of the lid-closure reaction was observed in 18 cases, the amplitude sometimes amounting to 2 or 3 mm.

Of the two paranoid cases, the sensory reflex was present in one only, and the psychical reflex and pupil-unrest in neither.

Bumke concluded that absence of the psycho-reflex, pupillary unrest, and the sensory reflex are typical of dementia præcox.

In a later communication, quoted by Bach (2), dealing with 200 cases of dementia præcox, Bumke states that he found these symptoms in 60 *per cent.* of the whole, but that his hope of finding in them a reliable early indication of the disease had not been fulfilled.

Wassermeyer (quot. Bach (2)) examined 39 cases of dementia præcox with the Zeiss binocular microscope by daylight. Of these, 5 were hebephrenics, 25 katatonics, and 9 paranoiacs.

Of the 5 hebephrenic patients, in 2 cases pupil-unrest and the psycho-reflex were evident; in the other three they were present, but comparatively inactive. Among the katatonic patients, 2 out of 9 stuporose cases showed almost complete absence of pupil-unrest. In 1 out of 5 excited cases both pupil-unrest and the psycho-reflex were absent. Of 9 other katatonics, including 2 in a state of remission, 7 showed both reactions distinctly.

Out of 9 paranoiacs, pupillary unrest and the psychical reflex were absent in 2. On the whole, 6 out of the 39 cases (15·4 *per cent.*) showed loss of the psychic reflex and unrest.

For the purpose of comparison, Wassermeyer examined 174 soldiers, and found a great variety in the activity and range of movement of the pupils. In about 13 *per cent.* pupil unrest was almost completely absent; in one case he found no trace of pupil-unrest or the psychical reflex.

He explains the difference between his results and those of Bumke by the higher power of magnification which he used. He concludes that the loss of pupil-unrest and the psychic reaction are to be referred principally to mental deterioration, although this loss may occur in dementia præcox before the dementia has become marked. Wassermeyer found no clinical difference between cases which show the symptoms in question and those which do not.

In Table XII (p. 269) I have given records of 10 cases of *hebephrenia*, of between seventeen and forty-one years of age at the time of examination. The average pupil-diameter is 5·2 mm. The pupils were equal in 7 cases; slight inequality was shown by 1, more evident inequality by 2. Both pupils were circular in 6 cases, both irregular in 3; in 1 instance the left pupil

was slightly elliptical, the right circular. There was loss of the sensory reflex in 1 case, and diminution in 3.

Case No. 2 shows the development of corectopia and irregularity of the pupils, along with diminution of the sensory reaction and pupil-unrest. The patient's mental condition, however, was apparently undergoing improvement in the interval between the two observations.

Table XIII (p. 270) contains the records of 17 cases of *katatonia*, varying in age from fifteen to thirty-eight years. The average pupil diameter is 5.4 mm.

The pupils were equal in 10 cases, slightly unequal in 3; a difference amounting to  $\frac{1}{2}$  mm. or more in size is shown by 3 cases. Both pupils were circular in 6 cases; both irregular in 9; one pupil irregular in 2. Five cases showed loss of the sensory reaction in both eyes; in one instance as a temporary condition; 6 cases showed sluggishness of the reaction in both eyes; in 3 only was the sensory reflex active. No. 1 shows improvement in the activity of the sensory reflex.

Pupil-unrest was visible to the naked eye in at least 7 cases, though in 2 of these its activity was diminished. In No. 17 it was absent, but reappeared.

Change in the outline of the pupils is seen in Nos. 1, 2, 12, and 17. Change in the size-relation of the pupils is seen in Nos. 2 and 17. The light-reaction is impaired in Nos. 2, 13, and 17.

Case No. 2 showed in October, 1912, more rapidly alternating inequality, each pupil in turn becoming about  $\frac{1}{2}$  mm. larger than the other, at intervals of a minute or two. The patient was then in a dull stuporose condition. On March 13th, 1913, the patient was in a state of marked katatonic stupor, the pupils were unequal and reacted sluggishly to light, and no sensory reaction or pupil-unrest was visible to the naked eye.

Case No. 17 shows improvement in the state of the sensory reflexes and pupil-unrest, but diminution in the activity of the near-vision reaction.

On the whole, if it is permissible to draw deductions from such a small number of records, there is a rather greater tendency towards irregularity and inequality of the pupils, and disturbance of the sensory reflex in *katatonia* than in *hebephrenia*.

Table XIV (p. 271) deals with 3 cases of *paranoia with dementia*. Inequality of the pupils is twice recorded, and sluggishness of the sensory reflex twice.

Table XV (p. 271) contains 5 cases of *paranoia* without marked tendency to dementia. The age varies from forty-eight to seventy-four. There is inequality of the pupils in 3 cases, not exceeding  $\frac{1}{2}$  mm. in amount. Two cases in the senile period show irregularity of both pupils and sluggishness of the sensory reaction. Diminished sensory reaction is also found in case No. 2.

### (7) *Melancholia of Involution.*

Involution melancholia is a psychosis of the involutional period of life, characterised by great emotional depression, apprehension, and anxiety.

There are certain borderland cases of senile dementia with emotional depression that are difficult to distinguish from involution melancholia. Naturally melancholiacs after a prolonged duration may develop senile deterioration (White (27)).

Sluggishness of the light-reflex may be found in presenile psychoses; then there may be difficulty in diagnosing the condition, because general paralysis may be developed even after the age of sixty.

Table XVI (p. 271) contains the records of 27 cases of *melancholia originating in the involutional or presenile stage of life*. There are 16 females, aged from forty-two to sixty-four at the time of examination, and 11 males, aged from forty-three to sixty-five.

The average pupil-diameter of the whole series is 4.8 mm.; of those aged sixty and below, 4.9 mm.

The pupils are equal in 7 cases; there is slight inequality in 11; and a difference in size of  $\frac{1}{2}$  mm. or over in 9 cases; 16 cases show bilateral irregularity; 5 cases have one irregular pupil; in 6 cases both pupils are circular.

The light-reflex is sluggish in both eyes in 5 cases; one case shows diminution in one eye only. One case (No. 25) has Argyll Robertson pupils; the patient is æt. 61. Probably he has had syphilis; and he may in the end prove to be a general paralytic. Two other cases show loss of the sensory reaction, 10 cases show diminution.



Absence of pupillary unrest is recorded twice, diminution 4 times, and normal activity 15 times.

Change in the size-relation of the pupils is shown in Nos. 4, 7, 8, 9, 17 and 18 ; in Nos. 8 and 18 there is reversal.

Change in the outline or position of the pupil took place in 7 cases—Nos. 4, 8, 18 ; Nos. 3 and 17 (transient corectopia ; No. 7 and 25 (transient elliptical outline).

In a majority of the cases, therefore, we find a slight degree of inequality (which may be inconstant), also slight unevenness of outline. Changes in the form and position of the pupils may occur. In a few cases there is sluggishness of the light-reflex, and the sensory reflex may be inactive or even absent.

#### (8) *Senile Dementia.*

In physiological old age, the diameter of the pupils is usually smaller than in middle age or youth. In about one-fourth of the cases marked miosis is to be found—the pupils being 2 mm. or less in diameter (Bumke (8)). The reaction to sensory and psychical stimuli is present, but frequently sluggish, especially when there is miosis. The light-reflex as a rule is not appreciably impaired, although in senile miosis the amplitude of the reaction is naturally small. The near-vision reaction is usually unaffected. Moebius (quoted by Bumke), on examining the eyes of 33 old people found marked miosis and absolute rigidity in 3 cases, and sluggishness of some of the reactions in 19 of the remainder.

Other observers affirm that rigidity of the pupil due solely to old age never occurs (Bach (2)).

Bumke found that the galvanic pupil-reflex required a relatively much stronger current for its production in old age than in the earlier periods of life.

In senile dementia the state of the pupils is on the whole similar to that in physiological old age, except that disturbances of the reactions are more common. Bach (2) summarises the extant records as follows: loss of the light-reflex is found in about 2 *per cent.* of cases, absolute rigidity in 0.5 *per cent.* ; the reaction to light is reduced in about 4 *per cent.*

According to Bumke (8), the pupils in senile dementia have the following characteristics: they are contracted, often

markedly so ; they react, but slightly and sluggishly to light, and only slightly in near vision, There is no distortion of their outline, and anisocoria is rare ; mydriasis and the typical Argyll Robertson symptom are never present apart from complications.

As the near-vision reaction is never quite intact, typical reflex-rigidity never occurs ; but complete or incomplete absolute rigidity may be found, the former only in advanced old age (Bumke). The gradual development of the symptoms of senile dementia may be subject to interruption and modification from the effect of more acute changes in the brain due to arterio-sclerosis. Hæmorrhages or patches of softening may produce marked pupillary symptoms. There may be mydriasis or miosis in one eye or in both, and the mobility of the iris may be impaired or altogether lost.

The condition of the pupils in 16 cases of *senile dementia* is recorded in Table XVII (p. 273). The age varies from sixty-five to seventy-seven. The average pupil diameter is 4.2 mm.

In 2 cases there are complications. In No. 3 there is amaurotic rigidity associated with loss of vision in the left eye. In No. 4 there is loss of the direct and consensual light-reflex in the left eye, impairment in the right eye, and bilateral loss of the sensory reflex. In none of the others is there any evidence of gross lesion. All suffered from more or less marked arterio-sclerosis.

Five cases had equal pupils, 4 show slight inequality, 7 show more marked inequality. Both pupils are irregular in 12 cases ; 2 have irregularity of one pupil, and 2 have both pupils circular.

Relatively marked miosis is seen in No. 7 and 16. Apart from Nos. 3 and 4, 8 cases exhibit bilateral diminution in the direct and consensual light reactions, and in 5 of these the near-vision reaction is also sluggish. In nine observations loss of the sensory reflex occurs twice, and diminution four times.

From this table it appears that in most cases the pupils are rather small, usually slightly irregular, and differing slightly in size. Usually the light-reflex is sluggish, and in a certain number the near-vision reaction is sluggish as well. The sensory reflex may be impaired even when the reaction to light and near-vision is active.

These conclusions agree fairly well with the observations of Bumke, except with regard to the frequency of slight anisocoria and irregularity of the pupil.

(9) *Manic-depressive Insanity.*

Seventy cases of manic-depressive insanity have been examined. The records appear in Tables XVIII to XXII (pp. 273-6). There are 14 first-attack cases of melancholia and 4 recurrent cases suffering from melancholia on admission. There are 13 recurrent cases suffering from mania on admission and 17 first-attack cases of mania. These were all of short duration at the time of examination. There are also 22 cases of "chronic mania"—in most of which there is variation in the mental symptoms at longer or shorter intervals, occasional periods of apathy and depression, or of acute excitement; dementia is not a marked feature of the clinical picture in these 22 cases.

The 18 cases of *melancholia* will be taken together (Tables XVIII and XIX, pp. 273-4).

The age varies from twenty-three to fifty-five. Average pupil-diameter, 5.4 mm. The pupils are equal in 11 cases, they show slight inequality in 5, more marked inequality in 2. Both pupils are circular in 4 cases; in 1 case one pupil was slightly irregular; in 13 cases both pupils showed irregularity, mostly of slight degree.

The light-reflexes (direct and consensual) were present and active in practically every case. In 5 cases the sensory reflex was diminished. Pupillary unrest is present as a rule. Case No. 7 (XVIII) showed loss of the sensory reflex.

On the whole, the pupils tend to be equal, and are often slightly irregular. Change in the size-relation and outline of the pupils is slight in amount. There may be diminution of the sensory reflex.

There are altogether 30 cases of *mania* in which the attack is of short duration. They are recorded in Tables XX and XXI (pp. 274-5). The age varies from twenty to sixty-three. The average pupil-diameter is 5.4 mm.

The pupils are equal in 9 cases; there is slight inequality in 10 cases, more evident inequality in 10 cases.

Both pupils are circular in 11 cases; 2 cases show irregularity

of one pupil, 16 cases of both pupils. Change in the pupil form (mostly slight) is seen in 5 cases. Transient corectopia is once recorded. The sensory reflex is usually present; its absence is recorded only twice. It is diminished in about half the cases.

In Case No. 4 (XXI) the patient was depressed and emotional on admission, but she later developed a restless excited phase, in which the previously circular pupils became oval and then returned to the circular form, but with slight irregularities.

In No. 8 (XXI) improvement in the condition of the pupils was associated with improvement in the mental state; irregularity and inequality disappeared, and the sluggish sensory reflex regained its activity.

On the whole, slight irregularity and slight anisocoria are commonly found, and in a certain number the sensory reflex is sluggish. Change in these symptoms may accompany change in the mental state of the patient. The light reaction (direct and consensual) is practically never impaired (in Case No. 10, XX, arterio-sclerosis and alcoholic excess are disturbing factors, which probably explain the sluggish reactions).

The average pupil-diameter is the same in the maniacal cases as in the melancholic cases: but anisocoria is perhaps more common in the former than in the latter.

Table XXII (p. 276) contains 22 cases of *chronic mania*. The age varies from thirty to sixty. The average pupil-diameter is 4.8 mm. In 18 cases the pupils are equal; in 4 there is slight inequality.

In 18 cases both pupils are circular. Three cases show bilateral irregularity, 1 case shows unilateral irregularity. The light-reflex is active, except in 1 case. The sensory reaction is active in 11 cases, diminished in 6, and once recorded as absent. The average pupil-diameter is considerably smaller than in the cases where the attack is of short duration.

On the whole, pupillary disturbances are but slight.

#### (10) *Terminal Dementia.*

Table XXIII (p. 277) shows the pupillary condition in 14 cases of *advanced dementia*. The age varies from forty to seventy-four.



The average pupil-diameter is 4.5 mm. Out of 12 observations equal pupils are recorded 7 times, slightly unequal pupils 5 times.

In 9 cases both pupils are circular ; both are irregular in 3 cases, and one pupil is irregular in 2 cases.

The light-reflex is not impaired. The sensory reflex is active in 6 observations, sluggish in 3.

Beyond a gradual shrinkage in pupil-diameter as age advances, no marked anomaly is recorded. Irregularity is not very frequent, slight anisocoria is rather more frequent.

### CONCLUSIONS.

After consideration of the published records and opinions, as well as the results of my own examination of insane patients, I have formed the following conclusions with regard to pupillary symptoms in mental diseases :

(1) General paralysis presents a very large variety of pupillary phenomena, of which the most significant is the Argyll Robertson symptom. Absolute rigidity of the pupil is not so frequent or so significant as reflex-rigidity. Most of the other symptoms may be regarded as leading up to, or dependent on, the development of one of those two conditions.

Many cases terminate before the light-reflex becomes extinct. Reappearance of the light-reflex when once it is lost is a possible but rare occurrence. On the whole, the more serious derangements of the iris are more frequent in the advanced stages of the disease.

(2) Syphilitic insanity, if accompanied by vascular or syphilitomatous disease implicating the nervous system, may present marked pupillary symptoms, which are not necessarily permanent. In the functional varieties of syphilitic insanity pupillary symptoms are relatively slight and inconstant.

(3) Alcoholic insanity, the most common of the toxic psychoses, is often accompanied by disturbance of the pupils. In rare cases the pupil may not react to light ; sometimes the sensory reflex is absent. Sluggishness of the light-reflex, or of all the reactions, is not uncommon ; irregularity and anisocoria are fairly frequent. All these symptoms may be subject to change.

(4) Insanity with epilepsy presents well-marked pupillary symptoms in association with seizures; but the pupils of epileptics in their "habitual" state often show variations from the normal. These latter variations are in most cases inconstant, and some of them are functional in their nature.

(5) Apart from the rare occurrence of marked congenital abnormalities, pupillary symptoms in imbecility and idiocy are usually unimportant. A slight degree of irregularity is occasionally present. The light-reflex is rarely impaired; the sensory and psychical reflexes may be diminished, occasionally absent.

(6) In hebephrenia diminution or loss of "unrest," and of psychical and sensory reactions may be observed; there may be changes in the form and position of the pupils.

(7) In katatonia there is frequently diminution or loss of the sensory and psychical reactions and of unrest; temporary or changing irregularity, eccentricity, and inequality of the pupils are often present. Variation in the activity of the light-reaction may occur, usually a diminution.

(8) The sensory reaction may be diminished in paranoia, especially where there is a certain degree of dementia.

(9) In melancholia of involution a slight degree of inequality and irregularity of the pupils is often perceptible. Changes in the form, position, and size-relation of the pupils may occur. In a few cases the light-reflex is sluggish, and the sensory reaction may be inactive, rarely absent.

(10) The pupils in senile dementia tend to be small, usually reacting somewhat sluggishly to light: the near vision reaction may also be impaired. The sensory reflex is occasionally absent; it may be impaired when the light and near vision reflexes are comparatively active.

(11) The melancholic phase of manic-depressive insanity presents but few pupillary symptoms. Slight irregularity is not uncommon; anisocoria is relatively infrequent. If there is change in the form or size-relation of the pupils it is slight in amount. The sensory reflex is sluggish in a few cases only.

In the maniacal phase slight irregularity and inequality of the pupils are frequently observed. In a certain number of cases the sensory reflex is sluggish. Change in these symptoms may accompany change in the mental state.

The average pupil-diameter is the same in the melancholic as in the maniacal phase.

The pupil-diameter is smaller on the whole in patients who are habitually in a state of excitement. Here there are no marked pupillary disturbances. In a small proportion of cases the sensory reflex is sluggish.

(12) In terminal dementia irregularity of the pupil is not very common. Slight anisocoria is rather more frequent. As age advances the influence of senility on the condition of the pupils gradually makes itself felt.

(13) Apart from general paralysis, epilepsy, and gross brain-lesions, more evident pupillary symptoms are found in the toxic psychoses and in senile dementia. In katatonia and the habitual condition of insane epileptics transient sluggishness of the light-reaction may be observed.

In many kinds of insanity there is a tendency towards variation in the form, position, and size-relation of the pupils.

(14) It has been claimed that diminution and loss of the sensory and psychical reactions, and of pupil-unrest are typically frequent in the triad of diseases included in the term "dementia præcox." These symptoms, however, are not uncommon in other types of insanity; and no special diagnostic importance can be attached to their occurrence.

(15) Further investigation of the condition of the pupils in insane patients is required. Each case should be re-examined at regular intervals, and control-observations of a sufficiently large number of healthy persons should be carried out under similar conditions.

#### METHOD OF EXAMINING THE PUPILS.

Insane patients sometimes do not submit kindly to methodical examination. Either timidity, suspicion, resistiveness, inattention, or lack of intelligence on the patient's part may demand the exercise of much tact and patience on the part of the observer. He may find it impossible to make any but disjointed observations, which may be vitiated by reactions associated with restless movements of the patient's eyes or eyelids.

I have found it most satisfactory to use only comparatively simple appliances, and as few of these as possible.

The patients were examined in dull diffused daylight, both

eyes being equally illuminated. Each patient was asked to look steadily at some definite object in the distance. The lighting was such that the outline of the pupils could be clearly seen, but bright daylight or sunshine was avoided. One result of this is that, except where the pupils are rigid to light, the sizes recorded in the tables cannot be compared with the "physiological diameter" as estimated by Schirmer. The measurements in the tables, however, were made as far as possible under the same conditions, and may be regarded as comparable among themselves.

Another drawback is that the sensory reflex is not so clearly evident as it is with brighter illumination, but in doubtful cases re-examination before a window can be carried out. On the other hand, examination in a comparatively dull light enables one to appreciate differences in size and irregularities of form which are not always so clearly seen with brighter illumination.

For measuring the diameter, I found it best to compare the pupil with a series of black circular discs marked on a strip of white cardboard. This simple pupillometer, held close to the patient's temple on the same level as the eye, does not distract his attention so much as would an instrument held in front of the eye. The series of discs differ in size by  $\frac{1}{8}$  mm., and it is possible by comparison to judge intermediate sizes, so that one can practically estimate the diameter of the pupil to the fourth part of a millimetre. A black disc on a white ground appears smaller than a black disc on a somewhat dark background; this effect of irradiation may lead to over-estimation of the size of the pupil in patients with dark irides, but the error would not amount to more than  $\frac{1}{4}$  mm. In order to minimise the tendency to error, a series of discs marked on grey cardboard might be used.

For testing the light-reflex, I used a pocket electric flash-lamp or a small surgical hand-lamp connected to a dry battery. In either case a bright light is produced by pressure on a button, and the strength of illumination can be graduated as required by varying the distance between the lamp and the patient's eye.

In testing the sensory reaction, painful sensation was produced by the pressure of a blunt needle on the patient's skin. In cases where the psychical reflex is active, the mere approach



of the needle if observed by the patient is sufficient to produce a marked dilatation of the pupils.

The pupillary unrest was estimated by the naked eye. The ordinary corneal loupe does not give a sufficiently large field of view, and a Zeiss binocular microscope was not available. In any case only a certain number of patients could be satisfactorily examined with this instrument.

Finally, I wish to express my thanks to Dr. Kay, the former Medical Superintendent of Wadsley Asylum, and Dr. Vincent, his successor, for kindly granting special facilities for the examination of patients for the purposes of this investigation.

#### NOTE ON THE SYMBOLS USED IN THE TABLES.

In the records given in the following series of tables, the sign + indicates that the reaction in question is present and active, the sign — indicates that it is present, but with diminished activity, and O means that the reaction is absent, or at any rate not appreciable to the naked eye.

(The term "corectopia" is used in the general sense as explained on p. 87.)

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(1) Thesis—M.D., University of Edinburgh.

I.—*Temporary Alcoholic Insanity* (p. 236).

No.	Sex.	Age.	Size of pupils in mm.				Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.		L.		Direct.		Consens.		R.	L.	R.	L.	R.	L.			
1	M.	34	5	5	+	+	+	+	+	+	+	+	+	+	+	Circular	Circular Irregular Slightly irregular Somewhat elliptical Slightly irregular "		

II.—*Polyneuritic Alcoholic Insanity* (p. 237).

1	M	28	5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+</
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[illegible]



IV.—*Insanity from Lead Poisoning* (p. 238).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.		Consens.		R.	L.	R.	L.	R.	L.			
					R.	L.	R.	L.									
1	M.	65	5	4½	+	+	+	+	+	+	—	—	+	+	Irregular Irregular oval	Irregular Irregular oval	13/3/12 7/3/13
		66	4½	4 × 3½	—	—	—	—	—	—	—	—	—	—			

V.—*Syphilitic Insanity* (p. 233).

1	M.	17	5½	5½	+	+	+	+	+	+	+	+	+	+	Circular Slightly irregular Irregular	Circular Slightly irregular Irregular	10/1/13 7/2/13
2	M.	19	5½	5½	+	+	+	+	+	+	+	+	+	+			
3	M.	25	6½	5½	+	+	+	+	+	+	+	+	+	+	Circular Slightly irregular Circular; corectopia	Circular Slightly irregular Circular; corectopia	2/3/12 13/2/13
4	M.	32	6 × 5½	5½	+	+	+	+	+	+	+	+	+	+			
5	M.	40	6½	6½	+	+	+	+	+	+	+	+	+	+	" Circular	" Circular	5/1/90 31/5/10
6	M.	41	5½	5½	+	+	+	+	+	+	+	+	+	+			
7	F.	37	5	R. < L.	—	—	—	—	—	—	—	—	—	—	"	"	5/1/90 31/5/10
		57	4	4½	+	+	+	+	+	+	+	+	+	+			

VI.—*General Paralysis* (p. 230).

1	F.	39	3½	4	0	0	0	0	+	+	0	0	—	—	Irregular Circular Oval	Irregular Circular Oval	3/12/09 9/11/10
2	F.	49	4	equal	0	0	0	0	+	+	0	0	—	—			
3	F.	58	3	3½	0	0	0	0	—	—	0	0	—	—	"	"	23/11/10 21/10/12
		59	3½	3½	0	0	0	0	+	+	0	0	—	—			
4	M.	46	4½	4½	0	0	0	0	+	+	0	0	—	—	Circular	Circular	13/12/12 28/1/13
		46	4	4½	0	0	0	0	+	+	0	0	—	—			
			4	4½	0	0	0	0	+	+	0	0	—	—	Irregular	"	27/2/13
			3½	3	0	0	0	0	+	+	0	0	—	—			

[illegible]

## VI.—General Paralysis (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
					Direct.		Consens.										
			R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.			
20	M.	54	7½	6½	—	—	—	—	+	+	—	—	—	—	Irregular	Irregular	22/11/12
21	M.	55	3½	4½	—	—	—	—	+	+	—	—	—	—	"	"	28/1/13
22	F.	53	3½	4	—	—	—	—	+	+	—	—	—	—	"	"	27/2/13
23	M.	43	4½	2	—	—	—	—	+	+	—	—	—	—	Slightly irregular	Slightly irregular	27/8/12
24	M.	41	4½	5½	—	—	—	—	+	+	—	—	—	—	Irregular	Irregular	22/10/12
25	M.	37	5½	4½	—	—	—	—	+	+	—	—	—	—	Slightly irregular	Slightly irregular	27/8/12
26	M.	66	5½	5½	—	—	—	—	+	+	—	—	—	—	Roughly elliptical	Roughly elliptical	29/10/12
27	M.	38	5½	5½	—	—	—	—	+	+	—	—	—	—	Circular	Circular	2/1/12
28	M.	47	5½	4	—	—	—	—	+	+	—	—	—	—	Slightly irregular	Slightly irregular	7/11/12
29	M.	53	4	6½	—	—	—	—	+	+	—	—	—	—	"	"	13/2/13
30	M.	55	3	4	—	—	—	—	+	+	—	—	—	—	Slightly irregular	Slightly irregular	6/12/10
31	M.	45	4	4	—	—	—	—	+	+	—	—	—	—	Oval	Oval	11/11/12
32	M.	61	5	4	—	—	—	—	+	+	—	—	—	—	Slightly irregular, oval	Slightly irregular, oval	17/2/11
33	M.	38	4	4	—	—	—	—	+	+	—	—	—	—	Oval	Oval	7/3/13
			3	4	—	—	—	—	+	+	—	—	—	—	Very irregular	Very irregular	6/8/09
			Very small	Very small	—	—	—	—	+	+	—	—	—	—	Slightly irregular	Slightly irregular	7/11/12
			4	3½	—	—	—	—	+	+	—	—	—	—	"	"	2/2/06
			4	4	—	—	—	—	+	+	—	—	—	—	Irregular	Irregular	19/12/12
			5	4	—	—	—	—	+	+	—	—	—	—	"	"	8/10/12
			4	4	—	—	—	—	+	+	—	—	—	—	"	"	24/10/12
			5½	4	—	—	—	—	+	+	—	—	—	—	Slightly irregular, oval	Slightly irregular, oval	4/12/12
			4½	4	—	—	—	—	+	+	—	—	—	—	Irregular	Irregular	5/2/13
			3½	4	—	—	—	—	+	+	—	—	—	—	Corectopia	Corectopia	13/3/13 (Seizure)

[illegible]



## VI.—General Paralysis (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.								
					Direct.		Consens.																		
			R.	L.	R.	L.	R.	L.	R.	L.															
52	M.	36	5	3 $\frac{3}{4}$	+	+	O	+	—	O	+	R.	L.	Irregular ; flattened Irregular Corectopia ; circular Irregular Irregular ; elliptical Irregular Slightly irregular "	Irregular ; flattened Irregular Corectopia ; circular Irregular Irregular ; elliptical Irregular Slightly irregular "	10/12/12 13/2/13 9/2/13 12/2/13 26/12/12 14/2/13									
53	M.	32	7 $\frac{1}{2}$	5 $\frac{3}{4}$	+	+	O	+	+	O	+	+	+				Corectopia ; irregular Slightly irregular Irregular Slightly irregular "	Corectopia ; irregular Irregular Oval Slightly elliptical Flattened below Circular Irregular Slightly irregular	13/2/13 9/2/13 12/2/13 26/12/12 14/2/13						
54	M.	47	5 $\frac{1}{2}$	5 $\frac{3}{4}$	+	+	+	+	+	+	+	+	+							Corectopia ; irregular Slightly irregular Irregular Slightly irregular "	Corectopia ; irregular Irregular Oval Slightly elliptical Flattened below Circular Irregular Slightly irregular	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12			
55	M.	32	6 × 5 $\frac{1}{2}$	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+										Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12
56	M.	42	5 $\frac{1}{2}$	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+												
57	M.	44	3 $\frac{1}{2}$	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12									
58	M.	31	5 $\frac{1}{2}$	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+				Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12						
59	M.	44	4 $\frac{1}{4}$	4 $\frac{1}{4}$	+	+	+	+	+	+	+	+	+	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12									
60	M.	35	4 $\frac{1}{4}$	4 $\frac{1}{4}$	+	+	+	+	+	+	+	+	+				Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12						
61	M.	42	5	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12									
62	M.	43	5 $\frac{1}{2}$	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+				Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12						
63	M.	38	4 $\frac{1}{2}$	4 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12									
64	M.	47	5	5 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+				Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12						
65	F.	44	4 $\frac{1}{2}$	4 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12									
66	M.	18	4 $\frac{1}{2}$	4 $\frac{1}{2}$	+	+	+	+	+	+	+	+	+				Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	Corectopia ; irregular Slightly irregular Slightly flattened Slightly irregular Circular "	7/3/13 25/1/12 7/3/13 8/10/12 7/11/12						

VII.—*Insanity with Epilepsy* (p. 241).

[illegible]

VII.—*Insanity with Epilepsy* (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.		Consens.		R.	L.	R.	L.	R.	L.			
					R.	L.	R.	L.									
29	F.	57	5½	5½	+	+	+	+	+	+	+	+			Circular		
30	M.	57	3½	4	+	+	+	+	+	+	+	+			Slightly irregular		
31	F.	63	4	4	+	+	+	+	+	+	+	+			"		
32	F.	64	4	4½	+	+	+	+	+	+	+	+			Circular		
33	F.	64	4	4	+	+	+	+	+	+	+	+			Slightly irregular		
34	F.	66	3½	4	+	+	+	+	+	+	+	+			Circular		
35	F.	67	4	4	+	+	+	+	+	+	+	+			Slightly irregular	Corectopia—in	

VIII.—*Imbecility with Epilepsy* (p. 242).

1	M.	7	6½	6½	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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XII.—*Hebephrenia* (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.		Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.	Consens.	R.	L.	R.	L.	R.	L.			
5	F.	29	4½	4½	+	+	+	+	—	—			Circular	Circular	
6	F.	32	5	5	+	+	+	+	+	+			"	"	
7	F.	37	5	5	+	+	+	+	+	+			"	"	
8	F.	37	4	4	+	+	+	+	+	+			"	"	
9	M.	40	5½	5½	+	+	+	+	+	+	+	+	Slightly irregular	Slightly irregular	
10	M.	41	5	5½	+	+	+	+	+	+	+	+	Circular	Slightly elliptical	

XIII.—*Katatonía* (p. 248).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.		Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.	Consens.	R.	L.	R.	L.	R.	L.			
1	M.	15	7½	7½	+	+	+	+	+	+	+	+	Circular	Circular	26/10/12
2	M.	19	5½	5½	+	+	+	+	+	+	+	+	Slightly irregular	"	7/3/13
			7½	7½	+	+	+	+	+	+	+	+	Somewhat oval	"	4/10/12
			6½	6½	+	+	+	+	+	+	+	+	Circular	"	28/1/13
			6	6	+	+	+	+	+	+	+	+	Corectopia; slightly irregular	"	14/2/13
			6½	6½	+	+	+	+	+	+	+	+	Slightly irregular	"	11/3/13
			5	5	+	+	+	+	+	+	+	+	Slightly irregular	"	13/3/13
			4½	4½	+	+	+	+	+	+	+	+	Slightly irregular	"	15/3/13
			4½	4½	+	+	+	+	+	+	+	+	Slightly irregular	"	16/3/13
3	M.	21	4½	4½	+	+	+	+	+	+	+	+	Slightly irregular	"	
4	F.	22	4½	4½	+	+	+	+	+	+	+	+	Circular	"	
5	M.	22	6	6	+	+	+	+	+	+	+	+	Slightly irregular	"	
6	M.	23	4½	4½	+	+	+	+	+	+	+	+	Slightly irregular	"	
7	F.	23	5½	5½	+	+	+	+	+	+	+	+	Circular	"	
8	M.	23	5	5	+	+	+	+	+	+	+	+	Slightly irregular	"	
9	F.	23	5	5	+	+	+	+	+	+	+	+	Circular	"	
10	F.	24	6	6	+	+	+	+	+	+	+	+	Slightly irregular	"	
11	F.	26	5½	5½	+	+	+	+	+	+	+	+	"	"	



XVI.—*Melancholia of Involution* (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.	Consens.	R.	L.	R.	L.	R.	L.	R.	L.			
7	F.	49	5 $\frac{1}{4}$ 5	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Irregular Slightly oval		9/11/10 23/11/10
8	F.	50 51	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{3}{4}$ 5 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Slightly irregular		24/10/11 22/11/11
9	F.	53	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		28/11/11 3/10/11
10	F.	54	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		31/10/11
11	F.	55	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Slightly elliptical Slightly irregular		
12	F.	57	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
13	F.	58	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Circular		
14	F.	60	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
15	F.	61	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
16	F.	64	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
17	M.	43	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Corectopia; slightly irregular		28/8/12 13/2/13
18	M.	47	6 5 $\frac{1}{2}$ x 5 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Somewhat oval Oval; irregular		22/11/12 13/2/13
19	M.	48	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	Corectopia; slightly irregular		
20	M.	49	5 3 $\frac{3}{4}$	4 $\frac{1}{2}$ 3 $\frac{3}{4}$	++	++	++	++	++	++	++	++	+	+	Slightly oval Irregular		
21	M.	53	4 $\frac{1}{2}$ 3 $\frac{3}{4}$	4 $\frac{1}{2}$ 3 $\frac{3}{4}$	++	++	++	++	++	++	++	++	+	+	"		
22	M.	56	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
23	M.	56	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ 5 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		
24	M.	59	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$ 4 $\frac{1}{2}$	++	++	++	++	++	++	++	++	+	+	"		

	M.	$\frac{4}{3}$	$5\frac{1}{2} \times 5$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{+}{+}$	$\frac{+}{+}$	$\frac{-}{-}$	$\frac{+}{+}$	Slightly irregular Irregular Slightly irregular	Irregular; elliptical Irregular "	18/1/13 7/2/13
25	M.	61	$\frac{4}{3}$	$5\frac{1}{2} \times 5$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{+}{+}$	$\frac{-}{-}$	$\frac{+}{+}$	Slightly irregular Irregular Slightly irregular	Irregular; elliptical Irregular "	18/1/13 7/2/13
26	M.	64	$\frac{4}{3}$	$4\frac{2}{3}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{+}{+}$	$\frac{+}{+}$	$\frac{0}{0}$	$\frac{+}{+}$	Slightly irregular Irregular Slightly irregular	Irregular; elliptical Irregular "	18/1/13 7/2/13
27	M.	65	$\frac{4}{3}$	$4\frac{2}{3}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{+}{+}$	$\frac{+}{+}$	$\frac{0}{0}$	$\frac{+}{+}$	Slightly irregular Irregular Slightly irregular	Irregular; elliptical Irregular "	18/1/13 7/2/13

XVII.—*Senile Dementia* (p. 251).[illegible]XVIII.—*Melancholia (First Attack)* (p. 252).[illegible]



XVIII.—*Melancholia (First Attack)* (continued).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	Direct.		Consens.		R.	L.	R.	L.	R.	L.			
					R.	L.	R.	L.									
8	F.	33	5½	5½	+	+	+	+	+	+	+	+	+	+	Circular	Slightly irregular	8/11/12
9	F.	34	5½	5½	+	+	+	+	+	+	+	+	+	+	Slightly irregular	Circular	22/11/12
10	F.	34	5¾	5½	+	+	+	+	+	+	+	+	+	+	Irregular	Irregular	7/11/11
11	F.	34	5½	5½	+	+	+	+	+	+	+	+	+	+	Slightly irregular	Circular	22/11/11
12	M.	37	4½	4½	+	+	+	+	+	+	+	+	+	+	Slightly irregular	Slightly irregular	
13	M.	39	5	5	+	+	+	+	+	+	+	+	+	+	Irregular	Irregular	
14	M.	43	6½	6½	+	+	+	+	+	+	+	+	+	+	Slightly irregular	Slightly irregular	

XIX.—*Melancholia (Recurrent)* (p. 252).

No.	F.	Age	Iris	Pupils	Reaction to light	Reaction to near vision	Reaction to sensory stimuli	Pupillary unrest	Outline of right pupil	Outline of left pupil	Date of record
1	F.	32	5 1/2	5 1/2	+	+	+	+	+	+	17/10/11
2	F.	42	5 1/2	5 1/2	+	+	+	+	+	+	24/10/11
3	F.	39	5 1/2	5 1/2	+	+	+	+	+	+	
4	M.	55	5 1/2	5 1/2	+	+	+	+	+	+	

XX.—*Mania (Recurrent)* (p. 252).

No.	Sex.	Age.	Size of pupils in mm.		Reaction to light.				Reaction to near vision.		Reaction to sensory stimuli.		Pupillary unrest.		Outline of right pupil.	Outline of left pupil.	Date of record.
			R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.			
1	M.	23	5	5	+	+	+	+	+	+	+	+	+	+	Circular	(Eye enucleated)	
2	M.	26	4½	4½	+	+	+	+	+	+	+	+	+	+	Slightly irregular	Slightly irregular;	
3	M.	27	5	5	+	+	+	+	+	+	+	+	+	+	(left eye amblyopic)	Circular	
4	M.	28	5½	5½	+	+	+	+	+	+	+	+	+	+	"	"	
5	F.	35	5½	5½	+	+	+	+	+	+	+	+	+	+	"	"	
6	F.	36	5	5	+	+	+	+	+	+	+	+	+	+	"	"	
7	M.	40	7	7	+	+	+	+	+	+	+	+	+	+	"	"	

[illegible][illegible]

XXXI.—*Mania (First Attack)* (p. 252).







*The Clinical Significance of Katatonic Symptoms.* By  
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UNDER the heading of "katatonia" are included certain peculiar states of stupor and excitement, which tend to alternate irregularly with one another. The stuporose phase is characterised by increased muscular tension, or in some instances catalepsy, together with negativism, mutism, refusal of food, contrary acts, or not infrequently an increased suggestibility, as shown by echolalia or echopraxia. The prominent features of katatonic excitement are increased psycho-motor activity, attitudinizing, stereotyped movements and phrases, verbigeration, and senseless impulses. Various forms of convulsive attacks are motor phenomena which frequently occur during the course of the psychosis.

This group of symptoms was first described in detail by Kahlbaum, who regarded it as a special form of mental disease which exhibited, like general paralysis, a mixture of nervous and mental symptoms. This view was modified later by Kraepelin, who gave a different interpretation to the syndrome by including it in his dementia præcox group. According to this view katatonic symptoms are to be regarded as the expression of a deteriorating process, and have thus an unfavourable outcome.

Such a generalisation has been subjected to a considerable amount of criticism, chiefly on the ground that many cases which exhibit katatonic phenomena apparently recover, and do not seem to follow a deteriorating course. Some observers have even gone so far as to assert that katatonia should be regarded as a phase of manic-depressive insanity, rather than as a subdivision of the dementia præcox group. Such diversity of opinion coincides with our clinical experience. Many katatonic cases undoubtedly deteriorate, and many recover, at any rate for a time. The question arises, therefore, as to whether it is justifiable to regard these "recoveries" as cases of dementia præcox. Certainly they seem to indicate that katatonic phenomena have not the grave significance which has been attributed to them, and indeed it is such "recoverable" types which have been to a large extent the basis of the objections to

the whole conception of dementia præcox. It is somewhat puzzling to know into what category such cases as these should be placed, and to know what prognosis should be assigned to them. The point is obviously important seeing that katatonic symptoms are so frequent in adolescent insanity, and it would therefore appear to be of some interest to record the details of two of these "recoverable" cases, with the view of discussing the clinical significance to be attached to the symptoms which they presented.

A. H—, a single girl, æt. 20, was admitted to Wakefield Asylum on August 16th, 1910. The parents were living, and there was no neuropathic heredity. The mother stated that the girl was of average intellectual level, but inclined to be "moody." She had always been liable to unaccountable phases of depression, when she would weep, sit about the house, and refuse to say what was troubling her. For eighteen months her behaviour had been more obviously abnormal. She resented discipline and control, her conduct was erratic, she was constantly relating "romantic tales" about imaginary persons she had met, and in consequence of her unreliable behaviour she was dismissed from three situations. Later she began to express definite delusions. She affirmed that people were talking about her, men were concealed behind the door, rats were hidden in her bed, cats' eyes were staring at her, etc. This increasing peculiarity eventually led to her certification.

Upon admission she was stuporose and resistive. The expression was vacant; at times she spontaneously expressed irrelevant sentences, *e.g.*, "I want my mother to die in peace," but would only occasionally respond to questions by mechanically repeating the last few words. Later she sank into deeper stupor. She was completely inaccessible, mute, sat all day in a fixedly rigid pose, was neglectful in habits, required to be washed and dressed, refused food, and resisted every necessary attention. From time to time she became completely "katatonic," holding herself stiff and straight, so that she had to be carried from place to place.

This condition lasted for about eight months. During March, 1911, some improvement became apparent. Though remaining mute until August, she began to notice things about her. She maintained a stiff and rigid pose, but would turn her head automatically when questioned. On one occasion the constraint

and tension were broken, and she burst into natural laughter at the behaviour of a fellow patient, whose peculiarity was the indulgence in extraordinary facial contortions. She had one convulsive attack, after which she appeared to be rather better. All this time, she was being treated with high-frequency currents, apparently with some benefit. During the latter part of August, the patient began to speak, and the constraint in her movements gradually lessened. On November 14th, 1911, she was discharged, apparently quite well, bright and alert and anxious to return home.

When discharged she went to stay with some relatives. Unfortunately the environment was by no means good for her. She kept late hours and indulged in a series of gaieties, frequenting music halls and picture palaces, and attending dances. Upon her return home she was found to have become irresponsible and flighty; she resented control, and insisted on walking about the streets. She was unable to concentrate her attention upon her work, and muddled everything she attempted to do. Soon her conduct grew more abnormal. She stated that she was about to be married, basing her assertion on a slender friendship with some young man. She began to look over houses with a view to purchase, and to her parents' consternation, furniture, which she had ordered, began to arrive at the house, though she did not possess a penny. At this stage she was certified, and re-entered the asylum on February 13th, 1912.

Upon admission she was distinctly excited, but free from confusion, and correctly oriented in all spheres. Though garrulous, her speech was coherent. Her mood varied; on the whole she was pert, jocular, and boastful, but she readily became indignant at the position in which she found herself. She was going to see her solicitor—a purely imaginary individual—and intended to have the persons responsible for her detention put into prison. She saw nothing strange in her conduct, and admitted trying to obtain “a suite of furniture, a side-board, a piano, and a brass bedstead.” She affirmed that her banns were to be put up on the following Sunday.

The patient remained in this excitable state for some time. She related interesting but quite untrue stories about herself, *e.g.*, that she had had a baby before coming to the asylum. She applied for a post as nurse on the staff of the institution,

and also answered a matrimonial advertisement as follows :  
" Please sir, will you kindly tell me the name and address of the gentleman who is seeking for a wife. I think he is in the grocery business ; if so I will just suit him as I have been in that trade. If he has got a wife will you kindly tell me. I will pay the expenses if you will let me know. I am lonely, and about twenty-four years old."

After a time, the patient reached what might be regarded as her normal mental level, and it became possible to form some estimate of her character and personality. She was bright and alert, and threw herself eagerly into any form of excitement. She was conspicuous at the dances and almost offensively self-assertive. She was unstable, quarrelsome, easily upset, and resented control. She was inordinately vain and boastful, and though frequently detected in untruths, she behaved with ostentatious reverence at religious services. In her relations with men, she tended to be flighty, and she obviously regarded herself as a centre of attraction.

In spite of these constitutional defects, the patient kept free from any symptoms of insanity, and was therefore discharged on July 7th, 1913.

It was not long before we began to hear of the patient again. She sent two applications to be taken on the staff as a nurse, the last being written on the back of an envelope. Later, one of the nurses received a rambling letter from her, in which she stated she was to be married, and had bought her " friend " " a silver gold matchbox, silver cuff-links, and a new silk tie." It was evident that she was relapsing, and this opinion was justified, as she was readmitted to the asylum on January 6th, 1914.

She was in a thoroughly confident and self-assertive state when admitted, quite aware of her surroundings, and, indeed, she had herself requested to be sent back here. She had had one or two little love affairs, and had answered numerous matrimonial advertisements. At home, she had proved quite unmanageable, but she soon settled down in the asylum. At present, she has obviously regained her normal mental level.

The second case is of rather a different type, and exhibits more motor excitement.

F. H—, a single girl, æt. 23, was admitted to the asylum on October 9th, 1912. Her sister stated that she had had an



attack of depression five years before, following an attack of influenza. She was of a sociable disposition, fond of company, and usually high-spirited, though apt to be moody at times. Her mental illness had been sudden in onset. The certificate gives an indication of the leading symptoms. "Is gloomy and lethargic, sitting in a corner, and staring hard at nothing. When roused laughs inane. When sitting in a chair allows her muscles to relax and slips down on the floor. Lies motionless there until ordered to get up, when she rises without help. Takes a hat off the table and puts it on her own head, and throws it across the room." "F. H— seems very depressed, cries a lot without apparent cause, saying she has nothing to cry for, and then laughs in an idiotic manner. She imagines there are a lot of men about her, underneath her bed, and coming through the window. Eats soap."

Upon admission, she sat in a fixed position, and her face was expressionless, with her mouth partially open. She understood questions, and gave her name and age correctly. Her attitude to questions was in the main negativistic, though sometimes she would mechanically repeat the query. Usually she refused to reply or said "Don't know," though she obviously did know, and would laugh to herself as if secretly amused at something. At times, during examination she became restless, twisting herself about and peering on the floor.

For some days, she remained stuporous, standing about in a stiff and constrained attitude, smiling to herself and taking no interest in her surroundings. At times, she would kneel down and pray, though she laughed stupidly if she was asked why she did so, and seemed to lack any deep depression. Later, she became mischievous, and delighted to trip up her fellow patients. She was constantly grimacing, and at times made sudden impulsive rushes about the ward. There was a tendency to catalepsy. The symptoms remained stationary until April, 1913, when she rapidly began to improve, and on May 24th, 1913, she was discharged, apparently quite recovered. She was thoroughly bright and alert, interested in everything, and eager to resume her ordinary life.

On October 9th, 1913, she was readmitted to the asylum. During the interval she had kept very well, and had been employed as a domestic servant. Her mental symptoms had reappeared about fourteen days before her admission. They

need not be detailed, as they were almost identical with those observed during her previous attack, except that on this occasion she made a rather foolish attempt at suicide. She was quite aware of her surroundings, and knew the names of the patients and nurses. At the present time, she has much improved, and will, no doubt, be discharged eventually.

These two cases present quite familiar clinical pictures. The former is a pronounced case of katatonic stupor, and on the surface it resembles many cases which undoubtedly deteriorate. A period of depression, accompanied by delusions of reference and hallucinations, had been followed by a condition of deep stupor, associated with stupid resistiveness, extreme muscular rigidity, refusal of food, neglectful habits, mutism, and convulsive seizures. Though, however, the patient has been under observation for three and a half years, and she has during that time passed through three attacks of insanity, she shows no trace of dementia, and the personality is not permanently impaired in the sense of deterioration.

The second case also presents objectively a clinical picture strongly suggestive of katatonic dementia præcox. The echolalia, negativism, catalepsy, unmotivated impulsiveness, stupor, and above all the curious inco-ordination between the emotional reaction and thought content, such as silly hilarity associated with morbid religious ideas, all go to make up a symptom-complex suggestive of a deteriorating psychosis. Yet again one sees a bright, alert personality emerging from a second attack.

Now such cases are sometimes cited as instances of recovery from dementia præcox. This view would seem to render the conception of dementia præcox meaningless. To loosely apply the term to a group of symptoms irrespective of their outcome can serve no useful purpose. It would seem to be more reasonable to confine the term to those cases which definitely deteriorate. The degree of deterioration of course varies. In many true dementing types, a sufficient degree of adjustment occurs to justify discharge, and the patients exhibit only a certain dulness and reticence indicative of emotional dementia.

In the normal phases of our two cases, however, no trace of emotional or volitional dementia could be detected. On the con-

trary, instead of a lack of contact with the environment, one sees, especially in the case of A. H—, a strong emotional reaction to external impressions, and a thorough alertness and energy. Furthermore the second attack in the case of A. H— bore no resemblance to any phase of dementia præcox. There was no confusion or dilapidation of thought, her delusions were comprehensible and clearly expressed, and she was fully alert, and anxious to obtrude herself. These cases cannot therefore be regarded as deteriorating types, that is to say, the diagnosis of premature dementia or dementia præcox can be excluded.

In view of the fact that katatonic symptoms have no constant value in a prognostic sense, the question naturally arises as to how far it is possible to differentiate the deteriorating from the non-deteriorating types, during the acute stages of the psychosis. There is no doubt that the most valuable criterion is the presence or absence of confusion. Shaw-Bolton in his studies on "Amentia and Dementia" asserts that mental confusion exists to a greater or lesser degree in all cases which are about to develop dementia, and that cases in which this symptom-complex is absent belong to relapsing or recurrent forms of insanity. The existence of confusion he considers justifies a grave prognosis in adolescent insanity, unless of course it is primarily due to a definitely toxic cause. In stuporose cases, the absence of confusion is best demonstrated by eliciting normal emotional reactions to external impressions. Both our cases elicit this point very clearly. In the case of A. H— one suspected that she would recover when she reacted normally to an amusing experience. Her laughter at the behaviour of a fellow patient indicated that she was much less confused, and much more in touch with her surroundings, than had been hitherto suspected. In the case of F. H—, her mischievousness in tripping people up indicated in a similar manner that she was keenly interested in her surroundings, in spite of her apparent stupidity. It was the act of a maniac rather than that of a precocious dement. Such natural reactions would scarcely be exhibited in a case of katatonic dementia præcox, the essential features of which are a withdrawal from reality, and a lack of impressionability to solicitations from without.

Though this lack of impressionability, the result of confusion or detachment from reality, becomes a valuable diagnostic sign, it is often difficult to demonstrate, especially in deeply stuporose

cases—and reliance cannot be placed on a purely symptomatological diagnosis. The make-up of the personality is probably an even more valuable indication of the course which the case will take. If we consider the case of A. H—, one fact stands out clearly, *viz.*, that the three phases of definite insanity through which the patient passed are no more than the expression of an abnormal mental constitution. While the three attacks are so different in character, they are all merely episodes in the life of an unstable personality, and no true estimate can be formed of the significance of these attacks without reference to the setting in which they occur.

The patient had always been subject to emotional fluctuations, she was intensely egotistical, eager to attract attention and sympathy, vain and boastful, and notably untruthful. Her delusions, only half believed, and her tendency to relate romantic stories about herself, all reveal a craving to draw interest to herself. They indicate also, quite clearly, the mechanism of "wish fulfilment," or "living through" ungratified desires. Those features taken as a whole indicate an hysterical constitution, and justify the diagnosis of hysterical dissociation in respect to the prolonged phase of katatonic stupor.

In the second case, there is a clear history of a previous attack of depression, and the personality is of the "up and down" type, sometimes moody and at others gay—"easily upset by trifles." Such a mental constitution is known as the *cyclothymic*, and constitutes the basis for the severe manifestations under the heading of manic-depressive insanity. The attacks may, therefore, be diagnosed as a mixed form of this disorder. The depression is represented by the mutism, sad ideas, and general inaccessibility, and the excitement by impulsive acts, hilarity, and mischievousness.

Such personalities, alert and aggressive, thoroughly in touch with the environment, and reacting strongly to external impressions, form a striking contrast to that which is so often found in those cases which actually deteriorate. August Hoch has found that marked constitutional traits are found to occur in those individuals who exhibit subsequent deterioration. These pre-dementia præcox characteristics he describes under the heading of the "shut-in" personality as follows: "We find in dementia præcox persons who do not have a natural tendency to be open, and to get in contact with the environment, who



are reticent, seclusive, who cannot adapt themselves to situations, who are hard to influence, often sensitive and stubborn. but the latter more in a passive than an active way. They show little interest in what goes on, often do not participate in the pleasures, cares, and pursuits of those about them ; although often sensitive they do not let others know what their conflicts are ; they do not unburden their minds, are shy, and have a tendency to live in a world of fancies." It is personalities such as these which are in danger of sinking into premature dementia, rather than these emotional types which have been considered. The outbreak of insanity is merely a further shutting of themselves from contact with reality, an exaggeration of their normal traits.

It is thus important to recognise that the ordinary case of insanity is dependent upon a fundamental defect of mental constitution. Other types might be mentioned such as the psychasthenic and paranoiac, both exhibiting special reaction tendencies, but it is sufficient for the present purpose to consider the three forms to which reference has been made : the "shut-in" personality, which is often the soil for permanent deterioration, and the hysterical and cyclothymic, which constitute the basis for recurrent episodes of insanity.

We have furthermore to recognise that isolated phases of insanity, dependent upon an emotionally unstable mental constitution, are by no means confined to pure attacks of mania or melancholia, but may assume almost any variety of clinical picture. Especially is this the case in young people, when the cases frequently assume a colouring suggestive of premature dementia or dementia præcox. The existence of the mixed forms of manic-depressive insanity must be especially remembered. Many cases go through life with recurrent episodes of insanity which closely resemble katatonia, but without any deterioration. I recently published an account of one of these cases under the heading of manic-stupor. The patient, æt. 37, had been certified five times in the course of twenty years.

These few observations may be summarised as follows :

- (1) That katatonic phenomena occur in a variety of mental disorders, and are not necessarily significant of deterioration.
- (2) That the existence of actual confusion is significant of subsequent dementia, and the demonstration of this condition affords a valuable prognostic sign.

(3) That a prognosis cannot always be made on a purely symptomatological basis.

(4) That the course of the symptoms is largely dependent upon the make-up of the personality, and that no true estimate of their value can be made without reference to the reaction type or mental constitution of the individual.

#### DISCUSSION,

At the Quarterly Meeting held at Storthes Hall Asylum, February 19th, 1914.

The PRESIDENT said that this was a subject which, as they all knew, had attracted a great deal of attention in recent years, and regarding which much had been written. Some very valuable studies had been contributed, both clinical and psychological, mainly from Germany and America. Clinical records with critical comments thereon like those which Dr. Devine had contributed, and made by an observer who was evidently thoroughly conversant with the literature of the subject, had a very great value, as every member of the Association would agree.

Dr. BEDFORD PIERCE said that he was very much in sympathy with the President's remarks with reference to Dr. Devine's paper. This was exactly the kind of paper, dealing as it did with their everyday practical work, which was really of use to them. With regard to any comments upon it, he felt that he would like more time to arrange his thoughts. He would like to say, however, that the diagnosis of dementia præcox had been a very great difficulty to him. Indeed, he might make the confession that once he ventured to write an article on the subject of dementia præcox, illustrated by some interesting cases. One of these was that of a young lady who, in a sudden, impulsive attack of dementia, jumped out of a window, for no apparent reason whatever, and broke two limbs. Subsequently she passed into a dull, apathetic, delusional state, and had the strangest bizarre ideas. One of these ideas was that she was going to marry a child of six, and the incongruity of such a marriage, she being about thirty years of age, did not appeal to her in the least. The patient afterwards recovered, and had remained well for many years. Although it was true that her level of intelligence may not be very high, she is well enough to take her place in life satisfactorily. The question of recurrent confusional attacks was a difficult one. Dr. Devine was right, perhaps, in thinking that such were cases of the mixed form of manic-depressive insanity, and he (the speaker) remembered patients who had periodic attacks of confusion, but were never depressed or excited, and did not become demented in any way. This led to some difficulty in applying to all cases the statement quoted from Dr. Shaw Bolton to the effect that confusion was a bad sign, and likely to lead to permanent dementia. He thought that it was unwise to assume that a person with premature dementia could not recover. In the absence of a pathology of this disease it was a mistake to define it—as it was a mistake to define any disease—as necessarily one which could not recover. Would it not be better to say that recovery was rare?

Dr. G. DOUGLAS McRAE said that he for one would like to add his tribute of thanks to Dr. Devine for his paper. The paper was deserving of appreciation on the one point alone, if on no other, that the author had encouraged them to believe a little more firmly in British clinical teaching of the past twenty-five or thirty years. In recent years one had been rather handicapped by assistant medical officers, who had been absorbing German and American literature, and who diagnosed nearly every case as one of dementia præcox. One might be permitted to wonder why, if the diagnosis was so final and unfavourable, they troubled about treatment at all? It would be better to embrace Clouston's dictum and make themselves believe that every case with which they had to deal in the treatment of insanity held out the possibility of recovery. It was depressing to oneself to have generation after generation of assistants laying themselves out to diagnose incurable insanity, and, furthermore, it was a hopeless example to set to the nurses and attendants. It had been well worth coming all the way from Scotland to that meeting to hear Dr. Devine's paper.

Dr. JEFFREY desired to ask one or two questions. Could Dr. Devine throw any light upon the convulsive attacks which he mentioned as occurring in the first case cited in his paper? His second question would be addressed to Dr. McRae, of whom he would like to ask the wherefore of his certainty that dementia præcox was an unrecoverable disease. Dr. McRae had made that statement, and made it very strongly, and the speaker wished to know a little more fully his grounds for making it. The teaching of the German writers was that some cases of dementia præcox did recover. There was no difficulty in diagnosing dementia præcox, and yet there were recoveries.

Dr. J. G. SOUTAR said that he did not think that Dr. McRae made exactly the assertion which the last speaker attributed to him with regard to the question of recoverability in dementia præcox. Undoubtedly a certain number of cases of dementia præcox recovered to this extent, that they were able to leave the asylum. In the legal sense of the word, they recovered, but not in the true scientific sense. In his own thirty years' experience he had never seen a patient who, after passing through dementia præcox, had come out of it on the same intellectual plane as before he entered it. But many such patients were capable of taking their—or, at least, a—place in the world and of doing a certain amount of work. The value of Dr. Devine's communication was that it was a clinical paper, and concerned itself with facts with which they often had to deal. It was an interesting thesis, and after hearing what he had said they would not be inclined to diagnose a case as dementia præcox simply on the ground that the patient exhibited katatonic symptoms. The term "katatonia" was one of those which, in the course of years, had come to include a vast number of things which were never intended originally. He believed the term was invented in the seventies, and at that time it was accepted in the true sense of the derivation of the word. It meant the maintaining of fixed postures or attitudes. Gradually various other conditions were included, such as mutism, negativism, verbigeration, and many more, which were not indicated by the word itself. Nevertheless, he thought that all of these were conditions which arose from the same underlying mental state. What was the mental state underlying these exhibitions? For his own part, he thought that these various manifestations all indicated an affection of the will-power of the patient. When one came to talk with patients who had sufficiently recovered to be able to answer one it was evident that they themselves often recognised that their katatonic condition had arisen from anomalies of will. Certain of the patients refused food—one of the conditions now grouped under the name "katatonia"—absolutely owing to sheer inability to will that they should take it. They would tell one afterwards how they stopped and hesitated because they simply could not make up their mind to do anything. Others would describe how they had been under the influence of an idea which compelled them to maintain themselves in strange attitudes. He recalled a patient who persisted in placing himself in the attitude of crucifixion owing to the fixed idea that he was the crucified Christ. Greatly to his pain and torture, as he admitted, he had to maintain that peculiar posture. In such cases it was not the deficiency of will-power which explained the phenomena, but rather the exhibition of extraordinary, though misdirected, will-power—a will-power which probably most of those to whom he was now speaking, and he himself, would be unable to exercise for the sake of any idea they might hold. What they had to deal with in these katatonic conditions was an affection or anomaly of the will—a condition which was common to a very large number of curable and incurable mental disorders. He agreed with Dr. Devine that an unfavourable prognosis should not be made simply on the ground that a patient presented katatonic symptoms.

Dr. M. A. COLLINS thanked Dr. Devine very much for his paper, and particularly for one reason, namely, that, although they had cause to be grateful to the Continental specialists for telling them that they needed an improvement in classification, Dr. Devine, for one, was not prepared to accept all that they said on the subject of these investigations. Dr. Devine had told them that there was at least a question as to whether katatonia ought to be grouped with dementia præcox. At present they did not know enough to be able to put these things into a definite classification. There was no pathology to guide them. In medicine, as their knowledge of pathology developed, they learned that diseases which they thought to be definite were actually not so, and in mental diseases, where they had as yet no pathology, it was absurd to set up water-tight compartments. Katatonic



symptoms certainly occurred in young persons who had attacks of insanity, and, as Dr. McRAE put it, this led to every such patient being classified as a case of dementia præcox. In certain states of epilepsy he had seen all the symptoms of katatonic stupor, automatic movements, verbigeration, etc. If all cases were put down as dementia præcox they must be regarded as hopeless, and he was very glad to hear someone tell them—advancing clinical reasons for doing so—that they must not put katatonic symptoms permanently into dementia præcox.

Dr. McRAE, speaking in re-enforcement of his earlier remarks, with regard to which he had been questioned, said that his impression of the use of the term "dementia præcox" was that it was meant to describe a condition which originally would have been better named "essential dementia," meaning thereby that the case in time must necessarily deteriorate into one of dementia. That was what the term mainly implied. When one began to apply the term to cases, a certain percentage of which did recover, it would be well to try to find another name, instead of talking of dementia. But until they got a better name for it, they should stick to the old classification of adolescent insanity. The katatonic features, so common in adolescent insanity, were a set of phenomena occurring especially at that particular time of life—a period of brain development—in response to morbid brain action. Judging by the work of the younger men who read up dementia præcox, the speaker was perfectly satisfied that their whole aim in making a diagnosis was to suggest incurability, and it was a great pity that insanity should be studied from that point of view. It was a wrong position to take up.

Dr. R. H. COLLE said that Dr. Devine had raised so many interesting questions that it would take a long time to discuss the paper fully. The first case that Dr. Devine described led one to suppose that here, at all events, he was inclined to the diagnosis of dementia præcox. Dr. Devine had shown them the importance of finding out the primary mental condition with which they had to deal, and on which the psychosis was superimposed. Although in this case, evidently, his patient was hysterical, yet in view of all the symptoms exhibited, it seemed impossible to imagine that that patient had a clear course in life to remain a normal individual. The likelihood was that she would end in an asylum. From that point of view, therefore, the case might still come into the category of dementia præcox. He believed that they had made enormous strides in the conception of dementia præcox, although they might not all agree as to the exact meaning of the term. Dr. Mercier regarded dementia as mental activity on a lower plane in varying degrees from the normal. As against that definition it might be urged that some demented scarcely had any mental activity at all. Seeing that probably about 90 per cent. of these præcox cases ultimately did not recover, they were doing well, he thought, in accepting the term as it stood at present. Very little was known, unfortunately, about the pathology of the disease, but inasmuch as general paralysis of the insane, which all agreed to be incurable at present, was yet arrested from time to time, perhaps for years, although the patient was hopelessly doomed, it seemed to him that dementia præcox was practically in a similar category. He disagreed with Dr. McRAE in thinking that what was really, if he might say so, the truthful aspect of the case was necessarily a wrong one to take, and that it would have a demoralising effect upon the nurses and attendants. He (the speaker) put forward as an example a case which was at first taken to be one of manic-depressive insanity. The patient, who was deeply depressed, became katatonic, at first exhibiting pronounced rigidity. What was the pathological basis for that? What was the neurological or psychical change which was causing the katatonia? Was it the increase in the organic stimuli, which caused the energy to be used up in that direction? This patient's katatonia, which ultimately developed in the direction of mutism and refusal of food, became so marked a feature of the case that he was obliged to change the diagnosis from manic-depressive insanity to dementia præcox, with, consequently, a bad prognosis. With the means at present available in psycho-therapeutics this patient must ultimately become demented, but the newer ideas, such as serum therapy, held out certain possibilities for such a case when its pathology was better understood.

Dr. DEVINE, in replying upon the discussion, expressed his appreciation of the kind remarks which had been made about his humble contribution. Dr. Bedford Pierce had said that he did not quite agree with the ideas he had put forward with regard to dementia, and added that he had known recurrent confusional attacks

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which did not go on to dementia. The reply was that everything depended upon the cause of the confusion present. In confusional insanity due to a definitely toxic cause there was no doubt that the prognosis was very good. Such conditions as alcoholic confusion and puerperal confusion might be instanced. But in a young person who became insane without obvious toxæmia the demonstration of actual confusion made a bad prognosis. The speaker was more and more convinced of this. The first girl, A. H—, whose case he had described in his paper, was totally inaccessible for months, and it was impossible to tell whether she was confused or not. Directly it was demonstrated that she was not confused, they could say that she would get better. The worst cases were those exhibiting a lack of impressionability to external impressions. A great deal of attention had been paid to prison psychoses, a condition in which there were a series of symptoms almost identical with katatonia and dementia præcox. In these cases, however, one nearly always demonstrated symptoms due to surroundings. The patients betrayed a critical awareness of their environment. If it could be demonstrated that the patients were impressed by their surroundings, peering round after one, tripping another patient up (as in one of the cases cited in his paper), and the like, he thought they could be described rather as hysterical cases than as instances purely of dementia præcox. With what Dr. McKae said he undoubtedly agreed. Dr. McKae had read the meaning of his paper quite well. Although he (the speaker) was "soaked" in German ideas, he had little doubt that Kraepelin, in giving a bad prognostic value to katatonia, overstepped the mark, and at the present time he had modified his original views to some extent. Very often the cases did clear up and get better, and frequently certain cases might be equally significant of recurrent psychosis, as others might be of permanent dementia and deterioration. The question of the convulsive attacks occurring in his first case was a difficult one, but probably on investigating such cases (if one was able to do so) they would be found to depend on psychological factors. Often a certain symbolic meaning was involved. There was at least some definite meaning in the convulsive attacks very different from the purely psychological phenomena involved in the true epileptic attack. If the patients had been living through months of tension, and undergoing certain imaginary experiences quite detached from reality, it would frequently be found that the psychosis almost ended up with the convulsive attack, and from that time the patient began to recover. He thoroughly agreed with Dr. Soutar that these katatonic states were due to defects of will, and, of course, the whole psychology reduced it down to this. If one studied French writers, for example, Pierre Janet's *Les Obsessions et la Psychasthénie*, one found records of cases absolutely of the pure katatonic type which it was known perfectly well never deteriorated. In their general reaction and make-up these cases had no resemblance to a dementia case. They were due to fixed ideas. The idea, as in the case mentioned by Dr. Soutar, which impelled a patient to adopt the attitude of crucifixion, was an instance in point. There was no reason *per se* why a person who had such ideas should deteriorate, although, of course, if they occurred in patients who had the deterioration "make-up" it was otherwise. Normally such persons might be very clever, but they were always rather peculiar, detached from reality. The mental life was inwards rather than outwards. The characteristics of the "shut-in" personality were strongly marked in such cases. The course that the psychosis would take depended upon the sort of soil in which it occurred. With regard to Dr. Collins' remarks, he quite agreed with him that one should not attempt to dogmatise too much. The cases must be divided into deteriorating and non-deteriorating types. He (the speaker) did not see any sense in the term "dementia præcox" as applied to cases which could recover and which were capable of complete adjustment. The term was useless unless it implies deterioration of the emotional or volitional type. If they were going to take a group of symptoms as dementia præcox and say that the case might or might not recover, there was no definite basis for clinical investigation. The negativistic symptoms to which Dr. Cole had referred meant a shutting out of the world—a shutting out of the patients from contact with reality—and that was why they were so resistant to any external solicitations. Dr. Cole thought that his (the speaker's) first case would probably end in an asylum. For his own part, he did not think that this girl ought ever to be let out again. He thought that she ought to be a chronic inmate. But that did not mean dementia præcox. It meant that she could not

permanently adjust herself to reality, but there was no symptom or trace of anything which could be called dementia. In true dementia præcox the patient was always out of touch with his surroundings, but this girl, on the contrary, was absolutely "falling over" her surroundings, alert, eager, fond of anything that was going. He did not think that she ought to be discharged, although legally she might have to be, but her interest in her surroundings was against the idea of dementia præcox, and he did not think that such a term ought to be applied to these cases.

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### Clinical Notes and Cases.

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*Some Doubtful Cases of So-Called General Paralysis of the Insane.* By W. ROBINSON, M.B., D.P.M., Assistant Medical Officer, Wakefield Asylum.

CASES of mental disease which give definite mental symptoms and physical signs of the condition recognised and at present called general paralysis of the insane, and which, moreover give a Wassermann reaction, seem to be invariably due to syphilis, and to contain in many cases spirochætes in the cerebral substance. Out of seven such cases of well-marked general paralysis, which on death were examined for spirochætes by Dr. McIntosh, six cases showed the presence of spirochætes. The seventh case was regarded as doubtful.

Besides these definite cases there occur certain others, about which clinically doubt exists. They present many, if not all, of the physical signs of general paralysis. Recently, several cases of this kind under my notice have been regarded as general paralysis. They invariably gave a negative Wassermann reaction. Many of these cases show during life arterio-sclerosis.

It is proposed to give a brief account of two of such cases, dealing with them from their clinical and pathological aspects, and then to compare them with two cases which gave an almost identical clinical picture. The first two cases, regarded as possible general paralytics during life, were looked upon as such at the *post-mortem* examination. Later, on microscopic examination, the picture was one of arterio-sclerosis, and not the generally accepted microscopic appearance of general paralysis.

CASE I.—A. S—, female, æt. 47. She was dull and depressed. She displayed marked mental hebetude. She replied to questions in monosyllables. She was in the asylum eight months and remained in the

same condition until her death. Her speech was slurring, her pupils reacted sluggishly to light, and her knee-jerks were exaggerated and unequal.

The Wassermann reaction was negative for both blood and fluid.

At the *post-mortem* examination the cause of death was regarded as general paralysis. On microscopic examination the nerve-cells showed both acute and chronic changes. The cell-spaces were dilated, and contained small round-cells. Even the deeper layers of the pyramidal cells were affected, whilst, more superficially, there was tremendous loss of nerve-cells, chiefly in the upper pyramidal layer. The destruction of nerve-cells tended to be local, and there were scattered large areas almost denuded of nerve-cells. There was relatively little proliferation of the neuroglia, which was confined to the outer fibre layer. There was marked proliferation and fibrosis of the blood-vessels of both the white and grey matter, with here and there lying in rows amongst them definite adventitious cells, which were, however, very scanty. The microscopical and final diagnosis was arterio-sclerosis.

CASE 2.—W. S.—, male, æt. 62. On admission he was dull, listless, and confused. He had no idea of time and place, and he thought that the roof was going to fall upon him. He was stated to have had a fit previous to admission. Three months after admission he had a seizure, which left him with weakness of the left side, which, however, passed off. A month later he had another similar attack. After an interval of six months another seizure followed, and he sank into deep coma and died. On physical examination his pupils were small and did not react to light and accommodation. There was weakness of the lower part of the face. His knee-jerks were exaggerated, and a patellar jerk was obtained. There was a scar on the glans penis. He was regarded as a case of general paralysis.

On *post-mortem* examination no doubt was felt that he was not a general paralytic. An extensive cerebral hæmorrhage was also present. The larger cerebral arteries were enormously dilated, very tortuous, and showed pearly patches of fibrosis.

On microscopic examination there was really little matter with the nerve-cells. There was some vacuolation of nerve-cells in the superficial pyramidal layer, but in the lower pyramidal layer the nerve-cells were normal.

With regard to the neuroglia, this structure was markedly increased in the outer fibre layer, but elsewhere showed little proliferation.

The vessels throughout the cortex were fibrosed and prominent. One or two adventitious cells were present, but they were indeed rare. In the neighbourhood of some of the vessels were four or five leucocytes.

This brain was examined for spirochætes, but none were found.

The final diagnosis was arterio-sclerosis.

CASE 3.—M. H.—, female, æt. 46. On admission she was confused, and was lost to her surroundings. She showed no signs of understanding what was said to her. When questioned she stared vacantly in front of her, and muttered incoherently. Her pupils were equal and contracted; they did not react to light, and the knee-jerks were diminished.

The Wassermann reaction was positive for both blood and fluid.

The diagnosis at the *post-mortem* examination was general paralysis.

Under the microscope the nerve-cells showed various stages of chronic degeneration, and the deeper cells of the pyramidal layer were affected, although the greatest amount of cell destruction had taken place in the superficial part of the pyramidal layer of cells.

With regard to the neuroglia, a definite zone of thickened glia was present in the outer part of fibre layer. The pia-arachnoid was thickened, and contained large numbers of both round- and plasma-cells. The neuroglia was actively proliferating, and extended into the outer part of the pyramidal layer. Along many of the vessels were glial tunnels.

The vessels throughout the cortex were very evident. They showed a good deal of fibrosis. Some of the larger vessels presented beautiful plasma-cell peri-arteritis. Here and there were plaques of plasma-cells. The final diagnosis was general paralysis. Spirochætes were found in this brain by both the smear method, and by Noguchi's modification of Levaditi's method.

CASE 4.—S. C—, female, æt. 40. This is a particularly interesting case, as on admission she was pregnant.

She was dull, listless, and confused. She was lost to time and place. She could give no account of herself. Her pupils were unequal, eccentric, and irregular. They did not react to light. The knee-jerks were absent. A month after admission patient gave birth to a seven-months' child, which lived eight hours.

The Wassermann reaction was positive for the blood. The clinical diagnosis was general paralysis.

At the *post-mortem* examination the findings were practically identical with the preceding three cases, and she was regarded as general paralysis.

On microscopic examination spirochætes were very evident in the brain.

After carefully following the course of many such cases, it would appear that the mental symptoms and physical signs in some cases of arterio-sclerosis closely simulate those of general paralysis of the insane.

These cases are difficult to diagnose. They give a negative Wassermann reaction.

At the *post-mortem* examination the appearances are those which one has learnt to associate with general paralysis.

Under the microscope the vessel change is found to be confined to the elements of the vessel itself, and plasma-cell peri-arteritis is absent or exceedingly slight.

No spirochætes are present in these cases.

If one employs the term "general paralysis of the insane," limit it to those cases of mental disease which give a positive Wassermann reaction for blood and fluid. A more accurate term for such cases might be "cerebral syphilis of the insane."



## DISCUSSION,

At the Quarterly Meeting held at Storthes Hall Asylum, February 19th, 1914.

Dr. H. S. GETTINGS said that it was with a considerable amount of trepidation that he spoke on this subject, as he was neither a neurologist nor a psychiatrist, but as a clinical pathologist who had been brought into contact with these cases, it seemed to him that in them lay what might be the germ of new ideas with regard to general paralysis of the insane. Previous workers had pointed out the similarity between these arterio-sclerotic cases and the syphilitic ones, and he made his remarks not as a discoverer, but to emphasise the importance of the fact and of the possible lessons to be learned from it. He added that in what he was about to say he was speaking for himself alone. They had had much discussion upon the question at Wakefield, and different opinions were expressed. When he began the work of examining the Wassermann reaction of the patients who were clinically diagnosed as probably general paralytics—cases which, at any rate, gave symptoms suggestive of general paralysis—he found that his results, together with those of many other observers, were most discordant. He found, as had his predecessor, that he was getting many negative Wassermann's in cases which clinically were general paralysis. As some of these cases passed from the wards to the *post-mortem* room, and he watched them on the *post-mortem* table, and studied the results afterwards worked out by Dr. Robinson and Dr. McIntosh, he began to understand that probably under the group of clinical symptoms which were taken as those of general paralysis there were two classes of cases. In the one—the larger group—were included those cases which gave a positive Wassermann during life, and at the *post-mortem* and under the microscope gave the changes associated with general paralysis. In many such cases spirochaetes were found in the brain—they had been demonstrated in six out of seven recent cases at Wakefield. That was the syphilitic group, the cause of the condition being active syphilis. In the other and smaller group of cases were included those in which the clinical picture was the same, but in which the Wassermann was negative; on the *post-mortem* table the macroscopic appearances in these cases were similar to those of the other group, but the brains did not contain spirochaetes, and when these cases were examined under the microscope the change was found to be, not a syphilitic, but an arterio-sclerotic one. This probably explained many of the discrepancies in the figures of different workers on the Wassermann reaction in general paralysis. At the same time he did not wish to say that arterio-sclerosis was the only condition besides syphilis which could give the clinical picture of general paralysis, for it was possible that other causes existed. But the main point was to recognise that the clinical picture of general paralysis might arise from a non-syphilitic as well as a syphilitic origin, and that only the microscope could definitely separate them. He did not know whether any members of that audience felt doubts on the question of syphilis lying at the bottom of all cases of general paralysis, but there were some who did. He was talking to one of the past presidents of that Association, recently, who said that he could not possibly accept the statement that every case of general paralysis was syphilitic. Possibly, however, he had only been dealing with the cases clinically, and in that event it was often impossible to make the distinction. It was only by the aid of the Wassermann reaction and the microscopical section that one could differentiate, and in places where pathological work was not done, the Wassermann not performed, and the brain not examined microscopically, a judgment on the point was out of the question. If he might offer a suggestion, it would be to the effect that one got a progressive dementia, due on the one hand to syphilis, on the other to arterio-sclerosis, and perhaps other causes. Personally, he would like to sweep away the term "general paralysis," and to use instead a terminology based on the causes of the condition. Thus we would speak of syphilitic progressive dementia, and arterio-sclerotic progressive dementia and so on. However, "General Paralysis" seemed too firmly fixed to do this at present. Clinically, these things merged the one into the other. In some arterio-sclerotic cases only a few people would suggest general paralysis; in others, general paralysis seemed to be simulated very, very closely, and it would, he thought, clear up their ideas if they could realise that such a difference in the causative agency existed. The arterio-sclerotic patients might only represent a small percentage of the cases clinically regarded as those

of general paralysis, but it was because of this element of variation that they had had some of their discrepancies in the past. Supposing these cases were met with clinically, giving a clinical picture of general paralysis, by obtaining the Wassermann reaction, one could establish on the one hand their affinity with the larger or syphilitic group, or, on the other, with the smaller or arterio-sclerotic group. One case at Wakefield was diagnosed as general paralysis, but the Wassermann was negative, and in a little while the condition cleared up, and the patient was discharged as cured. The probable effective agent in that case, he understood, was alcohol, and yet it was possible at one time for the case to simulate general paralysis. Therefore he felt that the conception with regard to these cases which Dr. Robinson had brought forward was very important, and he wished to add, on behalf of both of them, that if any member would like to have pathological tests made on a particular case, or the Wassermann done for them, he himself would be glad to assist them, or, if they would send sections of the brain, Dr. Robinson would examine them and say into which group the case fell. It was by such investigations that they would arrive at fuller knowledge on this important subject.

Dr. H. DEVINE said that this work was really very valuable, because so very recent. One saw the coincidence of two important facts—namely, that in cases where one had a positive Wassermann reaction one was able to discover spirochætes in the brain. This seemed to prove the syphilitic origin of general paralysis absolutely.

Dr. GRAEME DICKSON said that he had had under his care recently three cases of general paralysis clinically diagnosed as such. Two of the patients were still alive, and the other was dead. These cases amply bore out the experience of the two speakers who had addressed them that afternoon. The two cases now alive were the most typical cases clinically of general paralysis he had encountered, and in both of them the Wassermann reaction was positive. In the other case, now dead, the Wassermann reaction was negative, and the examination after death in this case negatived syphilis, whereas arterio-sclerosis was present. He had had these three cases within about eight months, and they bore out in a small way the experiences which had been brought before them from Wakefield.

Dr. SOUTAR hoped that investigation would be continued to determine if further experience bore out the claim which had been made in the paper just read. It was surprising to find that an identical clinical picture was produced by two such dissimilar conditions as syphilis and non-syphilitic arterio-sclerosis—not an uncommon disease. There was room for further inquiry as to the nature and distribution of the arterio-sclerosis which was said to produce signs and symptoms which are clinically identical with those of general paralysis.

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### Occasional Notes.

#### *Sir Thomas Barlow and "After-Care."*

At the Annual Meeting of the After-Care Association, held at the Royal College of Physicians on February 23rd, those present had the pleasure of hearing one whose broad-mindedness, wide outlook, large-heartedness, and genial presence have earned not only the respect of the whole profession, but also of all those who are interested in the cause of the poor and afflicted. He presided with dignity and distinction over the greatest of all International Congresses of Medicine, and spoke with feeling and sympathy at the last annual dinner of the Medico-Psychological Association.

It is not surprising, therefore, to find Sir Thomas taking

the chair at a meeting of that most worthy of all charities—the After-Care Association. The good work of this Association, as would be expected, appealed to him, and he was not backward in giving his support and approbation.

He said that in the development of modern charities one comes to realise that in all large charitable associations and schemes the State, and municipality, and old endowed charities can do a great deal, but they cannot do everything, and it seemed to him that the more these social problems are studied, so far from favouring what some people are talking about—namely, putting everything on the State, which was a mischievous and shallow proposal—thoughtful people who have to face these problems see that an enormous amount of real charity must inevitably be done by enlightened voluntary effort, not acting sporadically by itself, but joining itself, so to speak, to the State, municipal, and old endowed methods, and supplementing their efforts. Of these there was not one, Sir Thomas ventured to think, that deserved more careful consideration than the After-Care Association, an institution which is the only one of its kind in the United Kingdom.

It seemed to him that the condition of the insane had not been fairly visualised by the average charitable person, who often ejaculated some words of sympathy, but as a rule seemed to want to get the insane person out of sight as quickly as possible, and who did not reflect enough upon what happened to these poor people when they leave the asylums. It was important to try to disabuse the minds of many charitable people of the strong prejudice that sooner or later these unfortunate people will relapse, and that it was throwing money away to spend anything on them, beyond preserving them from penury. So far from this being the case, we know that by properly thought-out means we can do a great deal, when the acute stages proper for asylum treatment are over, by changes of scenes and surroundings, and suggestions of new lines of activity outside.

Sir Thomas put the case none too strongly, for it is deplorable to feel the general reluctance there is to giving work and encouragement to those whose misfortune it is to have broken down mentally and subsequently recovered. In most cases the world was hard and unkind to them before; it is doubly the case when faced for the second time.

Some excuse can be made for the charitably disposed standing on one side during the time the patients are under care and treatment, (though they little know how they could help in the patients' recovery by a little attention to the loved ones at home); in fact there is little or no call for their efforts, and their interference might be harmful. But when the poor people are again thrown on the world the case is different, and their lot should appeal acutely to those who combine affluence and altruistic instincts.

Even those whose insanity was apparently due to their own fault cry aloud for brotherly help and encouragement, though the means adopted to assist them might be different to the others.

Great care is taken by the medical superintendents in recommending cases, so that there is no waste of the energies and means of the Association.

We hope that much good will be the outcome of Sir Thomas Barlow's sympathetic words.

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## Part II.—Reviews.

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### *The Sixty-seventh Report of the Commissioners in Lunacy for England and Wales, 1912.*

As in previous years, we purpose giving first a digest of the statistical information contained in this report, which is never an easy task, for the Commissioners cannot be charged with verbosity or a redundancy of language.

*Regarding the certified insane persons under care during 1912,* the total number was 138,377, an increase of 2,716, which was 275 above that of the annual average for the decennium, 257 above that for the quinquennium, and a 2.0 *per cent.* increase as compared with 1911, which is practically the average during the past ten years. With the exception of the Metropolitan licensed houses, and the naval and military hospitals, there was an increase in the figures for all classes of asylums and hospitals.

The *private patients* number 11,353 (males 4,852, females 6,501), an increase of 217, or nearly 2 *per cent.* over the preceding year. In 1883, less than one-tenth of this class were in public asylums; the proportion is now one-third.

The *pauper patients* numbered 125,841 (males 58,508, females 67,333). This number is 2,441 in excess of that of last year, or 236 in excess of the mean annual increase for the last ten years.



(The average annual increase for London since 1890—including those private patients who pay the pauper rates—is 523.)

The report gives the details of the distribution in proportion *per cent.* of both classes of patients during the past thirty years in the various kinds of asylums, hospitals, etc.

Since 1883, the proportion of private patients has increased in the county and borough asylums from 8.5 *per cent.* to 33.1 *per cent.*, the pauper increase for the same period being from 63.2 *per cent.* to 79.3 *per cent.* This is important, when it is borne in mind that there is generally a want of pauper accommodation. There are now some 3,760 private patients in public asylums; some, of course, pay either the bare pauper rate, or a small sum over for county expenses; but, no doubt, a large number occupy accommodation which otherwise would be available for pauper patients, either direct admissions or patients boarded out from congested areas. In this connection, it would be of interest to know the vacancies in registered hospitals and private institutions. We have no doubt but that the profit made by public asylums on private patients is well spent, yet in rate-supported institutions the pauper class should have first consideration.

The *proportion of pauper males and females*, 464.9 : 535.1, is much higher for the male sex than in the private class.

The *criminal patients* numbered 1,183 (males 903, females 280). The number housed in public asylums continues to increase, being 21.0 *per cent.* as against 20 *per cent.* during 1911. The Commissioners cordially support the contention of our Association that this is an evil that should be remedied. They welcome, as we do, the opening of the second State Criminal Asylum at Rampton, and trust that soon the county and borough asylums will be relieved of this class of patient. (The number of patients admitted to Rampton during 1912 was 88 males and 40 females—ultimate accommodation 800.) In a paper on "Criminal Types in a County Asylum" (April number, 1913), Dr. Lord points out that quite a number of criminals are admitted from the parishes who ought to be subsequently transferred to a State asylum for criminals.

Following upon this are the *statistics of the total distribution of the pauper insane in the various counties and boroughs*, which show many interesting changes, chiefly of local importance.

The *ratios of pauper insane to the population in the various counties* again form interesting reading. A map of England and Wales is given, which graphically depicts the comparative distribution to the population as ascertained by the census of 1911. From this map we gather the following information:

*Counties with less than 2.5 per 1,000 of the population:* Northumberland, Durham, West Riding, Derby, Denbigh, and Flint.

*Counties with more than 4 per 1,000 of the population:* Sussex, Devon, Hereford, Radnor, Montgomery, and Cardigan.

The other counties vary from 2.5 to 4 per 1,000 of the population.

Another map shows for each county the increase or decrease (per 10,000 of the mean population) of the pauper insane (both sexes) during the ten years 1901 to 1911. This reveals more accurately the real amount of prevalent insanity in different parts of the country. A study of this map shows that the areas with a decrease or no change in the

pauper insane were Salop, Montgomery, Radnor, Brecknock. There was an increase of more than 9 per 10,000 of the mean population in London, Herts, Essex, Middlesex, Surrey, and Sussex, and from 6 to 9 per 10,000 in Devon, Hants, Kent, Glamorgan, Monmouth, Northampton, Cheshire, and Anglesey. The rest of the counties showed increases from 3 to 6 per 10,000. In conjunction with this a table is given showing the actual increases or decreases *per cent.* in the general population and pauper insane in the intercensal period 1901-1911, also the ratios of the latter per 1,000 of the population, and the increase or decrease per 10,000 of the mean population. The increase for England and Wales is 6.7 per 10,000 and for London 12.1. A study of this table tends to show that there is no relationship between increase in population and increase of the insane.

The *comparative statistics of the insane and the general population*—always of vital interest—we think read more unfavourably than last year. The Commissioners remark that they reveal much the same information as last year. There has been a 276.4 *per cent.* increase in the insane since 1859, and an increase in the population during the same period of 87.5 *per cent.* The figures given in the previous report were 269 *per cent.* and 85.6 *per cent.* respectively. On January 1st, 1913, the total number of notified insane stood to the estimated population in the proportion of 1:267 or 37.48 per 10,000. The ratio for all (known) insane has increased in 54 years by 100.7 *per cent.*

*Admissions, discharges, and deaths.*—It is to be regretted that the *ratio of annual admissions* to the population, which had fallen gradually and continuously since 1902, showed a slight rise from 6.06 to 6.14 per 10,000. The decrease in the ratio of the *first admissions* to the population also showed a check. It was 5.12 per 10,000 during the year under review.

The *admissions* were 22,432, or 526 above the number recorded in 1911, and of these 18,738 were *first admissions*. The proportion of males to females was 47.7:52.3.

Of those *discharged* 7,345 had recovered, and the *recovery-rate* reckoned on the total admissions was 32.74, being 3.02 below the average 1903-12 inclusive.

The year 1912 cannot be considered a bright one as regards lunacy. It showed an increased rate of accumulation, an increased admission-rate, a decreased recovery-rate, and the deaths numbered 10,353, or 303 in excess of the number in 1911—a possible source of consolation to the overburdened ratepayer.

We look forward with interest to the report for this year, when the Commissioners promise us some detailed comments on the death table, which is now drawn up on the lines of the International list.

The Commissioners have adopted for the last few years the excellent plan of commenting fully upon some definite matter of interest in connection with the insane, based upon such statistical information in their possession as is germane to the subject. In 1910, they dealt with "The Diseases of the Insane," and in 1911 with "Insanity in Relation to Sex." The report under review gives an analysis of the "Causation of Insanity" during the first quinquennial period 1907-11 which has passed since the adoption of the revised registers and tables.

Before dealing with any specific factor, the Commissioners make some very instructive observations on the subject generally which we take the liberty of quoting freely. They point out that the recording of ætiological factors "is peculiarly liable to be affected by the 'personal equation,' and, apart from this source of fallacy, it may even be doubtful whether the problems concerning the causation of insanity can be satisfactorily determined by statistical analysis." "At the most it does no more than direct attention to certain antecedents in the life-history of the patient, and the value of the record depends mainly on the comparative frequency with which the facts or incidents occur in association with the disease, but when, as we are compelled to do here, these antecedents are considered in reference to the whole field of mental derangements, there is some risk of either unduly magnifying or minimising the importance of any special possibly ætiological factor. For when such factors are of common occurrence, their significance in the ætiology of particular disease is liable to be over-rated." "The more thorough scientific investigation of insanity—clinical as well as pathological, psychological as well as physiological—which has of late years made gratifying progress, is likely to lead to more precise knowledge of the conditions that determine special forms of derangement than can possibly be gained by numerical estimation of the antecedent attack." All this is very sound, as also is their opinion that careful systematic investigation of the family and personal history, and the collation and analysis of as large a number of cases as possible, cannot be without value as regards the ætiology of diseases in general, and insanity in particular.

A number of the more common factors in the *first-attack* cases are then taken, and treated separately. No facts, however, of special significance other than those generally known or surmised, emerge, but as an excellent summary of the most recent knowledge regarding the assigned causes of insanity it can be well commended, especially to the lay reader.

The following table is given (see next page).

*General matters.*—The Commissioners' comment upon the dispute between the local authorities interested in the Carmarthen Asylum has become a hardy perennial. It would seem to be probable that by the time this quarrel has burnt itself out, the asylum will need rebuilding entirely, when, no doubt, the delayed improvements will be incorporated.

The Commissioners' insistence on the provision of distinct chapels merits general approval and support, especially as regards the larger asylums. It will be interesting to find out as to how far a local authority can be compelled to adhere to plans which have received the approval of the Home Secretary. The action of the London County Asylums' Committee in extending the privilege of being married to their second medical officers is much commended.

As regards *finance*, the county and borough ratepayers will be interested to know that £3,268,462 was spent during 1912 on the upkeep, etc., of their asylums in England and Wales. Comfort, however, can be had in the reflection that the cost would be much increased in more ways than one if the lunatics now under care and control were free, though doubtless life would become more interesting.

*Table of Incidence (per cent.) of certain assigned Causes and Etiological Factors on Yearly Average of Cases admitted during 1907-11 for First Attack of Insanity. (V. App. A, Tables XVII and XVIII.) Males, 6,049; Females, 6,414.*

Assigned causes.	Incidence of each cause or factor assigned either alone or in combination with others.		Incidence of each cause assigned without any correlated cause or factor.	
	Males.	Females.	Males.	Females.
1. Insane heredity . . . . .	22.7	28.4	6.6	8.4
2. Congenital mental deficiency . . . . .	3.1	3.4	0.8	0.9
3. Puberty and adolescence . . . . .	4.9	5.3	1.7	1.9
4. Climacteric . . . . .	—	10.3	—	4.3
5. Senility . . . . .	11.4	11.8	5.4	6.5
6. Puerperal state . . . . .	—	6.1	—	3.2
7. Sudden mental stress . . . . .	3.9	6.5	1.6	2.5
8. Prolonged mental stress . . . . .	21.5	22.9	9.3	10.0
9. Privation and starvation . . . . .	2.4	2.3	0.6	0.6
10. Alcohol . . . . .	26.3	10.4	10.8	4.1
11. Influenza . . . . .	3.4	3.2	1.3	1.2
12. Syphilis . . . . .	12.6	1.8	5.1	0.6
13. Injuries . . . . .	5.1	1.1	1.9	0.4
14. Lesions of brain . . . . .	3.2	2.2	1.5	1.0
15. Epilepsy . . . . .	7.2	5.6	3.6	2.6

We share the Commissioners' apprehension expressed in their previous reports at the continued decrease in the *amount spent on food* for pauper patients. It is an unwise economy and of doubtful humanity.

We note that there is *building activity* in no less than twenty-four asylums, and three new asylums are in the course of erection or sanctioned.

Commenting upon *suicides* in asylums, they point out the danger of leaving pipes and other projections not covered in or protected in places not under observation. We are glad to note the latter proviso. If the Commissioners' wishes were carried out, an asylum, internally and externally, would present a wonderful appearance—in fact so striking that it might incline the would-be suicide to live and be reconciled to the world as not being completely devoid of humour. A more practical suggestion would be to insist upon the absence of the objects which so commonly suggest suicide, except when a nurse or attendant is present or where observation is not continuous. The wiles of a determined suicide are beyond imagination. One man is reported to have drowned himself in a fire-bucket; this has resulted in iron bars of sufficient strength being fixed in the mouths of all buckets in that asylum. Generations of patients will, no doubt, be curious to know why. The surroundings of a patient should not suggest suicide, neither should the precautions taken.

Amongst the *accidental deaths* is recorded the death of a patient from



drinking two bottles of whiskey after nine years' detention. This belated hospitality was proved to have been self-invited.

The incidence of *zymotic diseases* during 1912 is reported to have been much the same as in previous years. Many interesting and instructive memoranda from the medical superintendents on the occurrence of dysentery and diarrhoea are appended. After Dr. Coupland's important contribution on this subject at one of our recent meetings (to be found on page 39), we feel that there is no call for extended comment here.

*Research in mental diseases.*—It is very gratifying to record that the Commissioners continue to be whole-hearted in their advocacy for proper provision being made in asylums for scientific investigations. They plead for State grants to assist this important work, and point out how, unaided, the County of London has for seventeen years maintained a central laboratory for all its asylums. Reference is made to the representative meeting held in the City of London last autumn to further this work, and also to the Maudsley Hospital. It is impossible to attach too much importance to the authoritative declaration of the Commissioners, and their words ought to have as wide a publicity as possible. A copy of this part of their report should be widely circulated amongst local authorities in case it is overlooked. It is too often taken for granted that Blue-books are heavy reading and to be avoided as much as possible. This cannot be said of the Commissioners' Annual Report. It is full of human interest, and beneath its correct and official language can be discovered a world of humour and tragedy—chiefly tragedy.

Some thirty-eight pages are devoted to a summary of scientific work in asylums during the year. This section is extending yearly, and it will no doubt be a proud day for the Commission when it rivals in size the rest of their report. This year, to counterbalance the record of the prosecutions undertaken under their order, is a paragraph headed, "Heroic Conduct of an Attendant and Nurse." A few well-chosen words introduce an account of how one Attendant Lewis Thomas, late of Winwick Asylum, lost his life in trying to save the life of a patient, and of how Nurse Elizabeth Holley risked her life in a similar attempt. There are brave men and women in asylums, and we are grateful to the Commissioners for their appreciation. How much silent devotion and how many courageous deeds are unhonoured and unsung, and never even come to the ears of those immediately in authority. Nevertheless, none will begrudge the one the recognition her act of gallantry received at the hands of the King, nor the other, the Laurels of Self-Sacrifice.

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*Fifty-fifth Annual Report of the General Board of Commissioners in Lunacy for Scotland.*

The report gives, in the first place, the usual statistical information in regard to lunacy in Scotland for the year 1912. At the beginning of that year there were (exclusive of insane persons maintained at home by their natural guardians) 19,034 insane persons of whom the General Board had cognisance; at the end of the year the number was 19,188,

showing an increase of 154. Of the total number at the end of the year 2,587 were maintained from private sources, 16,545 by parochial rates, and 56 at the expense of the State. These figures include the *non-registered* insane, namely, the inmates of training schools for imbecile children (of whom there were at December 31st, 1912, 580—an increase of 20 during the year), and the inmates of the Criminal Lunatic Department of Perth Prison (numbering 56 at December 31st, 1912, and showing an increase of one during the year). The *registered* lunatics, that is, those who come on the ordinary registers of the Board as being provided for in royal, district, private, or parochial asylums, in lunatic wards of poorhouses, or in private dwellings under the cognisance of the Board, show the following changes: (1) There was among them a total increase of 133, due to a decrease of private patients by 18, and an increase of pauper patients by 151. (2) The total increase of 133 arose from an increase of the number in establishments by 129, and from an increase in the number in private dwellings by 4. (3) The increased number of 129 in establishments arose from a decrease of 14 private patients, and an increase of 143 pauper patients. Of pauper patients in establishments, the average annual increase during the preceding five years was 218, so that the increase of 143 during the year 1912 has been less than the average annual increase of that quinquenniad. (4) In private dwellings there was an increase of 4, which arose from a decrease of 4 private and an increase of 8 pauper patients.

Decreases in the number of the insane took place in seventeen counties or urban areas, mostly in districts with falling populations; increases occurred in twenty districts, and were usually due to rising populations; but in a few instances there was an increase of insane persons which was not to be accounted for by any increase in the general population. The proportion of registered lunacy per 100,000 of the general population of Scotland is estimated at 391.

Dealing first with patients in establishments for the insane, and excluding transfers from one establishment to another (the number of which was 416), there were admitted to establishments during the year 552 private and 2,917 pauper patients, a total of 3,469, being a proportion of 73·2 per 100,000 of the general population. The private admissions were 14 more, and the pauper admissions 106 less, than in the preceding year. The number of cases admitted to care *for the first time* was 436 private and 2,157 pauper, being for the former class 18 below, and for the latter class 46 above, the corresponding average number for the quinquenniad 1905–09. From establishments there were discharged as recovered 198 private and 1,090 pauper patients. Calculated on the number of admissions exclusive of transfers, the proportion of recoveries was for private cases 35·9 *per cent.*, and for pauper cases 37·4 *per cent.*, showing in both classes a tendency to decrease in the recovery-rate. It is pointed out that the proportion of pauper cases discharged recovered in 1912 is less by 10·2 *per cent.* than the corresponding number so discharged during the years 1880–84; and there is no doubt that the cause of this is to be found in the marked change which has taken place in the nature of the cases sent now to asylums for care and treatment, these including a much larger proportion of

senile patients and of patients broken down in bodily health than formerly. The number discharged unrecovered from establishments (transfers being again excluded) was 136 private and 393 pauper cases, the percentage proportion being 5·8 for the former and 3·0 for the latter class; and here again the tendency is for the discharge-rate still to be below that of previous years. The number of deaths in establishments was 1,523 (private 228, pauper 1,295). Calculated on the number of patients resident, this shows a death-rate of 9·8 *per cent.* for private cases and 9·9 *per cent.* for pauper cases, or 9·8 for the two classes taken together. The death-rate in 1912 was higher than it had been for many years past, the increased mortality being no doubt due to causes similar to those which have lowered the recovery-rate.

A table is given showing the progressive history of 2,539 patients who were first admitted to asylums in the year 1898. At the close of the second year 209 readmissions had occurred among these patients; and and at the close of the tenth year the readmissions numbered 662. The total number of readmissions during fifteen years was equal to 31·4 *per cent.* of the original number admitted. In the period covered by the table the removals by discharge and death during the first two years were equal to 68·3 *per cent.* of the number admitted, but during the last two years of the series the removals amounted only to 2·9 *per cent.* of the original number.

The method of placing suitable insane cases under care in private dwellings under the sanction of the Board, instead of in establishments, continues to receive special attention in Scotland; and the number so provided for at the end of the year was—private 112, pauper 2,909, total 3021. Of the private patients 41 are in houses which are specially licensed for the reception of not more than four patients: but the majority (71) are placed singly in houses which, having only one patient, do not require any license. The number of houses possessing special licenses for the reception of private patients is 25. Among the pauper patients 999 are boarded with guardians who are relatives, and 1910 with unrelated guardians. Of the pauper patients with unrelated guardians, more than two-thirds are in private dwellings specially licensed to receive two, three, or four patients. The remainder, as well as almost all patients with related guardians, are accommodated singly in houses which, having only one patient, require no special license. The number admitted during the year to the roll of pauper patients in private dwellings was 278, which is 34 less than in the previous year. Of these, 120, or 12 less than in the preceding year, were resident in private dwellings when first reported, and remained with the Board's sanction under private care; and 158, or 22 less than in the previous year, were removed from asylums. Of the total number of patients in private dwellings, 23 were certified sane during the year, 20 were removed from the poor-roll by their friends, 137 were removed to asylums, and 90 died—the death-rate being equal to 31 *per* 1,000. Of the registered lunatics in Scotland the proportion provided for in this way in private dwellings is 16·2 *per cent.*; and the system continues to be regarded as satisfactory and advantageous. The two deputy Commissioners are specially charged with the oversight of patients in private dwellings; and each of them directs attention to

the point that patients living with unrelated guardians are, on the whole, better provided for than those living with relatives. In the former class any short-coming can quickly be remedied, because the guardian knows that if this is not done the patient will be removed, and the licence cancelled. It is not possible always to use the same pressure in the case of patients living with relatives, as the guardian may take the name off the parochial roll rather than submit to the patient being removed from his care ; but even in these cases the attention drawn to the matter usually succeeds in securing some improvement in the patient's circumstances.

As usual, the report makes reference to various special points in Lunacy administration ; and of these the following are the more important.

(1) *Accommodation for private patients in district asylums.*—It is again pointed out that the reception of private patients by district asylums is of great service to a certain class of the community. There are 312 private patients provided for in this way ; and in addition there are 270 pauper patients whose maintenance is repaid in full to the parishes from private sources, and who are, therefore, really private patients in all but the name. It is only when there is accommodation over and above what is immediately required for parochial cases that district asylums can receive private patients in this way ; and the report repeats the recommendation, which has been frequently made in previous years, that statutory permissive power should be given to district boards to provide under suitable conditions accommodation specially for this class of private patients.

(2) *Discharge of pauper lunatics unrecovered.*—Attention is drawn to the fact that in asylums there is considerable difference in regard to activity in discharging unrecovered patients, a proportion of whom may have passed into a condition in which permanent asylum care is not required. It is pointed out that the number of admissions in any rate-supported institution is virtually beyond the control of those concerned with the asylum, and that the recovery-rate and the death-rate of any special asylum are found on an average to be fairly steady. It therefore depends very much on the dealing with unrecovered cases as to whether the accumulation of chronic residents in the asylum will take place with greater or less rapidity. Various conditions have an influence in determining activity in this matter, such as degree of pressure on the asylum accommodation, the relative cost of asylum and private care, the willingness of parochial authorities to assist the asylum in giving a trial outside to suitable cases, and local circumstances which may help or hamper the removal of patients. After giving due weight to these conditions, the report urges the importance of more activity in discharging suitable unrecovered cases, and says "the judicious discharge of such patients is from every point of view desirable, for it prevents overcrowding in asylums ; it obviates, or at any rate postpones, the serious cost of additional buildings ; it relieves the ratepayers of a burden which they ought not to bear ; and in the great majority of instances it means to the patient the difference between an uncongenial and restrained life, and one of comparative happiness and freedom."

(3) *Deaths from general paralysis.*—In continuation of statistics

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which were published in previous annual reports, the present report gives figures relating to the number, age, and sex of patients dying of general paralysis in Scottish asylums. Though in the general population general paralysis is numerically small among the causes of death (representing only 227 deaths, or about 0·3 *per cent.* of all deaths, in the year 1910), yet in Scottish asylums it is responsible for about 14 *per cent.* of all the deaths; and the now generally accepted view of its close connection with previous syphilitic infection makes its study of special importance in regard to the possibility of lessening its ravages. The figures given in the present report show that the proportion of deaths from general paralysis has gradually risen both for males and for females, and is now about one and a half times as high as it was forty years ago; that the largest number of deaths occurs in the age-period 41–50; that about 49 *per cent.* of all the deaths take place while the patient has still less than one year's residence in the asylum; and that the disease is distinctly more frequent when the asylum population is drawn from the larger town, and larger industrial centres in Scotland, as compared with parts of the country remote from urban and industrial life.

(4) *Deaths from pulmonary phthisis.*—An interesting and important part of the report discusses the death-rate from pulmonary phthisis among pauper patients in asylums. It has of course long been recognised that phthisis is much more frequent as a cause of death among the insane than among the sane. As the inmates of asylums are practically all of adult age, the comparison is best made with the adult general population of the country; and it is found that the death-rate from phthisis for pauper patients in asylums is more than eight times higher than the rate in the general population above fifteen years of age, the figures being respectively 14·5 and 1·737 per 1,000. The rate varies much in different asylums, ranging from 8·6 to 27·2 per 1,000 residents; but the figures show that even in those asylums which have the lowest amount of death from phthisis the rate is still very much higher than the rate in the general population of the district from which the asylum draws its patients. This increased susceptibility of the insane to phthisis is not due to their seclusion in asylums, but is accounted for by the profound nervous and metabolic change in their constitution produced by the occurrence of the mental derangement. At the same time, the recognition of the infectivity of phthisis implies the duty of providing in asylums means of isolation and suitable treatment, so as to limit as far as possible the risk of communication of the disease to others. The report states that those asylums which possess special arrangements for this purpose in sanatoria and open-air verandahs seem, on the whole, to have a lower amount of death from phthisis than the others, but to this there are several exceptions, which show that all the conditions affecting the matter are not yet fully known.

(5) *Cost of pauper lunacy.*—Information regarding the cost of district asylums provided by assessments, and the cost of maintenance of pauper patients is as usual given in considerable detail. Various circumstances make the capital outlay in providing asylums vary very much in different districts, and the annual sum required to meet the repay-

ment of capital expenditure and interest, calculated per bed in use, ranges from £4 6s. 1d. to £35 16s. 5d., the average being £15 1s. 11d. The annual expense of maintaining the patients in asylums varies much less; it ranges from £21 1s. 10d. to £30 12s. 6d. per patient, the average being £26 2s. 4d. The average total cost of providing lodging and maintenance for pauper lunatics in asylums is therefore £41 4s. 3d. per head. The amount contributed from State funds in aid of the cost of maintenance of pauper lunatics has, since 1892, been a fixed sum; and as in successive years it has had to be distributed over an increasing number of patients, the average contribution per head has steadily fallen, and now works out at 2s. 11½d. weekly. The average daily cost of maintenance of pauper lunatics ranges in asylums from 1s. 2d. to 1s. 10½d. per head; in lunatic wards of poorhouses from 10½d. to 1s. 7½d.; and in private dwellings from 8d. to 1s. 3d.

The report concludes with a cordial reference to the valuable work done by the two laboratories which have been established by associations of the Scottish asylums, indicates the advantages both in carrying out original research, and in the training of asylum medical officers in pathological work which are supplied by them, and expresses the view that they well deserve to be placed on a more secure financial basis than the present system of voluntary contributions in support.

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*Sixty-second Report of the Inspectors of Lunatics (Ireland) for the Year ending December 31st, 1912.*

Shall we ever reach that happy stage in social history when it will be possible to say there is no increase in insanity? There are indications, supplied by certain statistical facts which are among the happenings of recent years, which almost give colourable grounds for our venturing to hope that that blessed condition of things may not be outside the bounds of probability.

The number of the insane under care in Ireland during the year 1912 shows the inevitable increase which we have been prepared regularly to expect for an indefinite number of years past. The same unwelcome fact is reiterated in inspectors' reports year after year with a depressing monotony. That there is, however, a silver lining to the cloud can be demonstrated from the figures at our disposal. On page 17 of the Report the table giving the proportion of insane under care to population, with the average for each quinquennium from the year 1880—a table which appeared for the first time in the Inspectors' Report for the year 1911, and for which we offered at the time our grateful acknowledgments—shows that the rate of increase is on the decline. If, in order to bring our calculations up to date, instead of adopting the averages of the five-year periods as given in this table, in which that for the last three years is not computed, we calculate the averages for the last six quinquennia ending with 1912, we find that the respective increments for each period over that of the previous one were, in succession, 54, 56·2, 71·6, 50·8, and 27·2, which means a percentage increase of 18·4, 16·2, 17·7, 10·6, and 5·1 in each case respectively. That is to say that

the percentage increase during the past quinquennium was one-half of that of the previous one, and less than one-third of its penultimate. This is no immaterial decrease; it is both substantial, and has been maintained during the past ten years. It has been frequently urged that any inferences from the statistics for a single year, or for only a short term of years, are quite unreliable and fallacious, and this is undoubtedly the case; but when a tendency in a particular direction is apparent for so long a period as ten years, it is then fairly warrantable to draw some deductions therefrom.

The same favourable conclusion may, but with still greater confidence, be drawn from the statistics of first admissions. The inspectors call attention to the fact that the admissions in 1912 (both total and first admissions) were lower than in any year since 1898. (Re-admissions may be left out of account, as they have been practically stationary for the past twenty years.) And if in the case of first admissions we take the same six quinquennia, the figures show for the four preceding the last percentage increments of 11.6, 9.2, 17.3 and 5.3 respectively, while in the last there has been no longer an increase, but an actual drop of 1.4 *per cent.* as compared with the preceding similar period. To these figures we cannot but attach an important significance. They point unmistakably to at least a probability that the increase in insanity in this country is reaching its limit.

From the summary on the first page of the report we learn that the total number of insane under care on January 1st, 1913, was 24,839, as compared with 24,655 on the same date of the previous year, an increase of 184, the increase in 1911 having been 261, and the average increase for the preceding ten years 302. The increase during the year 1912 was altogether confined to district asylums, there having been a decrease in numbers in private asylums, workhouses, and in the Dundrum Criminal Asylum.

The figures from the last Census report are given for the first time, and from these it appears that during the decade 1901-1911, the total number of lunatics and idiots increased by 3,387, or 13.5 *per cent.*, representing a ratio of 1 in every 154 of population. The percentage increase, calculated on the census figures for each of the last six decades, was 41.2, 17.0, 11.5, 15.0, 18.2 and 13.5 respectively, there being, therefore, a very marked reduction in the rate of increase during the latest of these periods. A useful chart is given on page 15, showing in graphic form the distribution of the insane during the last five decades, comprising those at large, in workhouses, and in asylums, and also the comparative numbers of first admissions to district asylums. This chart indicates very clearly the continuous rise in the total number of insane, in those in district asylums, and in first admissions, the very marked fall in the number of insane in workhouses during the last two periods, especially the most recent, and, on the whole, a decided fall in the number of those at large, although there has been a trifling increase in this latter class during the past decade (4.5 *per cent.*).

Comment is made in the Report on the fact that the number of insane in workhouses and at large has decreased considerably (the ratio of insane in workhouses to total under care has fallen from 27 *per cent.* in 1880 to 10 *per cent.* in 1912), while that of patients in asylums has

been steadily advancing. The apparent "increase in insanity" attributable to this latter element must, therefore, be largely discounted, as it does not denote, except partially, an actual increase, but merely a transference of insane coming under one denomination to another class. When we add to this the influence of senility on asylum admissions, which in recent years has operated to a much greater extent than formerly, and also take into consideration the decline in the first-admission rate, we feel that the inspectors are perfectly justified in their general conclusion that "the present circumstances, on the whole, afford no reason for taking a very gloomy view of the future, despite the steady growth of the numbers of registered insane."

In district asylums the total number under care at the close of 1912 was 21,158, showing an increase of 278 over that of the previous year, in which the increase was 277, or practically the same. The daily average, however, which is a more legitimate basis of comparison, rose by 224 as compared with a rise of 346 in the previous year, thus showing a substantial decrease in magnitude. Taking all the facts into consideration, the outlook is far from discouraging.

The proportion of insane in the provinces is highest in Leinster, 1 in 136, next highest in Munster, 1 in 138, then in Connaught, 1 in 150, while Ulster has the enviable position of bringing up the rear with only 1 in 197. Of county and borough areas Waterford continues to head the list with a proportion of 1 in 104, Westmeath and Kilkenny coming next in order with 1 in 111 and 1 in 120 respectively, while the lowest ratios are found in Antrim County and Belfast County Borough, 1 in 250, Down, 1 in 222, and Londonderry, 1 in 198, the Ulsterman being seemingly endowed with a greater immunity against mental breakdown as compared with his southern compatriot, who is apparently an easier prey to the unfavourable influence of adverse circumstances.

The recovery-rate was 40.3 *per cent.* on admissions, which is over the average of the last two quinquennial periods, this having been 37.1 for the first and 38.6 for the last. This is hardly what was to be expected, as a larger number of senile and incurable cases are now being sent to asylums than formerly, so that there is some reason to doubt the accuracy of this figure. So much depends on the personal equation of those who have the decision of what constitutes a "cure" in each individual case. This is the more evident if we look at the returns of recoveries from the several asylums, which vary from a percentage of 58.5 in Armagh (females 67.6) to 21.5 in Limerick. It seems scarcely credible that there should be such an enormous difference between the curability of patients in one asylum and in another.

The death-rate was 6.8 *per cent.* on the daily average, and appears to be steadily falling, as the ratios for the past four quinquennia are 9.5, 8.1, 7.4, and 6.8 respectively. This is also different from what we should have been led to expect, and for the same reason, the accumulation of aged persons who have reached, or nearly reached, the normal average limit of human life. But, unlike the recovery-rate, there can be no questioning of accuracy here—there can be no uncertainty as to whether a patient has died or not—the figures must necessarily be absolutely correct. The lowest death-rate was in Armagh, 4.4, and the



highest in Antrim, 9·8, or more than double. There seems no assignable reason for this preponderance of mortality in the latter institution, Both asylums are rather overcrowded, the excess of population being 61 in Armagh and 53 in Antrim, and there was no epidemic of any kind in the latter. This is not the case merely as regards a single year, the mortality in Antrim having been continuously higher for the past ten years, the average for the whole period being 8·7, while that of Armagh was only 6. We can only surmise that the general environment must be more conducive to longevity in the one asylum than in the other.

The percentage mortality from phthisis appears to be diminishing, the ratios to total mortality for the past four quinquennia having been 26·9, 27·4, 27·1, and 22·3 respectively. Deaths from general paralysis are steadily, if slowly, increasing, the ratios for the same quinquennial periods being 3·3, 3·6, 4, and 4·2. Epilepsy remains practically stationary in this respect, its relative mortality being, if anything, on the decline.

May we again plead for an additional column to the table on page xxiv giving the averages for 5-year periods? It would make it *so much* easier to decide at a glance whether the incidence of any of the three diseases scheduled is increasing or otherwise, and it would be very valuable as a permanent record of very important facts. Also, an additional column to the table on page xxiii, showing the *percentages* of mortality from phthisis in each district asylum, would be of distinct advantage for purposes of comparison.

The phthisis mortality varies, as always, in individual asylums, but the differences are in some cases little short of amazing. Ennis heads the list with a ratio of 34·6, and Clonmel makes a close second with 34·4, while in Maryborough and Limerick the figures are 3·8 and 5·0 respectively. Such wide divergence in the relative incidence of the same disease in different counties is difficult to explain. According to a return from the Registrar-General, the percentage of deaths from pulmonary tuberculosis to total deaths from all causes for the counties just referred to is: Clare 10·8, Tipperary 9·9, Queen's County 7·1, and Limerick 8·7, from which it is apparent that the phthisis mortality ratio amongst the general population is somewhat higher in those counties in which the asylum mortality from the same cause is highest than in those in which it is lowest; but the difference does not at all approach in extent that which obtains in the case of the asylums. We can therefore only conclude that there must be something in the conditions and environment of some asylums which is specially favourable, and of others which is unfavourable, to the development of tubercle. Such facts as these statistics bring out go far to negative the view commonly held that there is some essential connection between insanity, *quâ insanity*, and consumptive disease. That is to say, there is reason for believing that it is not mental disease in itself, but the conditions under which those affected with mental disease live, move, and have their being, which are more or less predisposing to, if not, in many cases at least, directly provocative of this particular malady. As regards Clonmel Asylum it is to be noted that within the last few years special isolated buildings have been erected on elevated ground for the accommodation of phthisical patients, and yet this most com-

mendable proceeding on the part of the governing body seems, so far, to have had little or no effect in reducing the phthisical death-rate. It was 35.1 in 1909, and 34.4 in 1912—an almost negligible decrease.

Pathological inquiry does not seem popular in Irish asylums. In the case of only 167 out of a total of 1,424 deaths was a *post-mortem* examination held, representing a proportion of only 11.7 *per cent.* In five asylums not one was made during the year, and in four others only one. This is in very unfavourable contrast to what obtains in English asylums, in not a few of which autopsies are held in over 90 *per cent.* of cases.

A case of atrocious cruelty to a patient is reported as having occurred in one asylum, which it is to be hoped is altogether exceptional at the present day. In this instance a night attendant inflicted injuries on the thigh and abdomen of a female patient by burning her with a hot poker. Such inhuman conduct seems almost incredible in this enlightened age, and it deserved condign punishment. So that it is satisfactory to note that the delinquent, after being convicted, was sentenced to eighteen months' imprisonment with hard labour, while two other attendants who were on duty the same night were subsequently dismissed.

The cost of maintenance of the insane in Ireland is now well over half a million per annum, the expenditure in 1911-1912 being £505,401, and when repayments for loans are included the total amounts to £606,468. The deficit in the capitation grant, paid out of the local taxation account, was £27,624, a very serious deduction of 13.6 *per cent.* from the amount to which asylums should be entitled to receive from Government. If the Government are legally warranted, they are certainly not morally justified in withholding such a large sum which should properly be granted in aid of asylum expenditure. Such an unjust provision, although sanctioned by Act of Parliament, is utterly inequitable, and as the deficit must in the nature of things increase with each successive year, it will furnish a grievance which will be more and more acutely felt as time goes on, until, sooner or later, a peremptory demand from local authorities for redress will have to receive attention and a remedy be provided.

One lamentable fact revealed by the census statistics, and recorded by the Inspectors in their Report, is that there were in Ireland in 1911 congenitally defective persons to the number of 3,451 for whom no real provision is made. The Stewart Institution, the only one of the kind in Ireland, is able to accommodate only about 120 imbeciles, a mere fraction of the total number. The urgent need for additional institutions for the care, and no doubt as regards a considerable proportion the teaching and training, of this hapless class is only too apparent. The exclusion of Ireland, therefore, on probably nothing but political grounds, from the beneficial operation of the Mental Deficiency Act passed last year is a deplorable circumstance, and is a lasting discredit to anything that deserves the name of statesmanship.

The Inspectors record with regret the death during the year of Dr. Geoffrey Scroope, Assistant Medical Officer in Dundrum Criminal Asylum, whose zeal and efficiency won from them the warmest approbation. He has been succeeded by Dr. Gervase Scroope.

The reports on the condition of the insane in private asylums and in workhouses do not call for any special observations. As regards the latter institutions, however, the comments are, on the whole, more favourable than used to be the case in no very distant past. We look forward to the time when there will no longer be any insane of this class to report upon.

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*Précis de Psychiatrie.* By E. RÉGIS. 5eme Edition, with 98 figures in the text and 7 plates, of which 5 are coloured. Paris : O. Doin et Fils, Editeurs. Prix 12 francs.

This well-known work on psychiatry forms one of a series of excellent manuals for students of medicine, published under the direction of Prof. Testut, of Lyons. The first edition was published in 1884, and its popularity is shown by the fact that it has reached the fifth edition ; more than this, it has received a distinction of merit from the Faculty of Medicine of Paris, from the Academy of Medicine, and the Institute (Academy of Sciences).

The methodical arrangement of the work, and its comprehensive and lucid exposition, exhibits the mind of a master with a wide and extensive experience as physician and teacher. Prof. Régis in the 1230 pages of the book has condensed a very wide knowledge of the contemporary literature of the subject, yet, although the work contains so much detailed information, the author does not lose the thread of his argument, nor fail to present a clear picture of the clinical aspects of the various diseases of the mind, and their pathogenesis.

The first twenty pages are devoted to a historical introduction divided into four periods. Under the title of general pathology there are three chapters ; the first deals with generalisations concerning psychopathics, ætiology, evolution, and pathological anatomy ; the second is devoted to general symptomatology or semeiology ; the third to classification.

Psycho-analysis is so much in evidence at present that we turn to the pages of the book to see what Prof. Régis teaches. After giving three pages to an explanation of Freud's doctrine, the author comes to the following conclusion : "Les méthodes employées par Freud et ses disciples pour déceler ce complexe et le mettre à jour sont, pratiquement, très infidèles et très incertaines."

Prof. Régis, however, admits that the theory of Freud is not without "grandeur." "It has not only the attractions of a psychological doctrine, but also, as has been remarked, of a religious doctrine, which explains its celebrity, and the passion with which it is combated or defended."

A valuable feature of this work is the interesting descriptions the author gives of the evolution of our knowledge of a disease. Take, for example, dementia præcox, which so many associate with the name of Kraepelin as to believe that the great German psychiatrist had discovered it, whereas he has merely elaborated the clinical picture, and divided into types a form of insanity which was well known to the authorities on insanity as far back as Willis (1672), who, in a chapter on "Stupidity or Moroseness," points out that young people who were bright, alert, and sometimes even brilliant in childhood, in adolescence are stricken with obtusion and hebetude. Indeed, Morel in his great

work, *Traité des Maladies Mentales*, 1860, in different passages makes allusion to what he himself calls *démence précoce*. In his "Études Cliniques," he gives a picture of a katatonic, which Prof. Régis reproduces, and he refers in this work to the most important and obvious clinical signs of the disease, namely, the suggestibility, the stereotypism of attitudes, of gesture and of speech, the katatonia, the grimacings, the tics, and the negativism, called by him "nihilism." The author concludes by saying that not only has Morel (1851-1853) given a true clinical *résumé* of *démence précoce*, and which by priority belongs to him in great part, but also many other important additions to knowledge in psychiatry. Prof. Régis does not, however, allude to the fact that, Clouston gave an excellent clinical description of this disease, which he termed "insanity of adolescence." We are glad, however, to note that while claiming the just due for Morel, the author acknowledges the great merit of the services rendered by the German authors, Kraepelin, Kahlbaum, and Hecker, in resuscitating dementia præcox, and of grouping under this one term a series of similar states, having for an essential foundation a special process of progressive and rapid psychical decadence in young people. He divides dementia præcox into two great groups—constitutional or degenerative, and post-confusional, a type which differs altogether from the former, as it occurs without marked anterior predisposition; the pathological process begins by an attack of acute toxic or infectious mental confusion. In the course of this acute attack, or in consequence of it, phenomena of stupor with the characteristic ensemble of symptoms of katatonia are produced. This condition often terminates in a complete cure; it is only in cases where incurability occurs that the patients at length become demented.

Whether the views of the author concerning a post-confusional dementia præcox be accepted or not, it is generally admitted that cases occur which so simulate this disease that a serious error in prognosis might be made if the physician hastily arrived at a judgment that a katatonic stuporose patient was *necessarily* suffering from an incurable disease of the mind, without fully considering the facts of heredity and environment in relation to the probable causative factors which led to the mental derangement, combined with the evolution and progress of the symptoms. Régis says: "The tendency is more and more in fact to consider dementia præcox as a psychosis of intoxication, in particular as a psychosis of auto-intoxication of sexual origin (Kraepelin, Thisch), or even of more general auto-intoxication (Régis, Serieux, Masselon, Feghif, etc.)." There follows an excellent clinical account of each of the three types, katatonic, hebephrenic and paranoidal, with photographs of patients illustrating the principal objective signs.

In a review it is impossible to do more than refer to certain portions of a work, but to show how completely this work considers German as well as French psychiatry, we turn to arterio-sclerosis in order to see whether the author has considered a disease known as Alzheimer's disease, and we find an excellent account taken from Kraepelin. The author, however, remarks that if the clinical symptoms constitute a characteristic syndrome, the anatomico-pathological conditions are met with in other conditions, notably in the dementia of arterio-sclerosis.

More than one hundred pages are devoted to general paralysis, and



as Prof. Régis has always maintained the syphilitic origin of this disease, having been one of the first to describe the juvenile form of this malady in congenital syphilitics, we are not surprised to find in this work an account of the latest researches on the existence of the spirochæte in the brain, the discovery of which by Noguchi forms the last link in the chain of evidence proving syphilis to be the essential cause. Considerable attention is devoted to the pathology of general paralysis, and many coloured plates are given; the picture of the fourth ventricle showing the granulations, however, is rather crude and fails to give a proper idea of the condition. The author refers to Ford Robertson's account of the diphtheroid organism in relation to causation and treatment of general paralysis. He states that Candler confirmed this work, which is erroneous, for Candler came to exactly the same conclusion as A. Marie, that they could in no way be regarded as having any causative influence in the production of general paralysis.

The second part of the book deals with medico-legal practice; there is a bibliography of German and French authors, but we confess to a disappointment in not finding there the names of Maudsley and Mercier.

In conclusion, we can strongly recommend this admirable work to all who are interested in the study and practice of psychiatry.

F. W. M.

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*Mental Diseases: A Text-book on Psychiatry for Medical Students and Practitioners.* By R. H. COLE, M.D., M.R.C.P. With 52 Illustrations and Charts. Pp. 343. Price 10s. 6d. net. London: University of London Press, 1913.

ANOTHER text-book, designed especially for the use of medical students and practitioners, can hardly be said to be urgently needed. There are already several recent excellent publications of this nature in the English language, most of which have been reviewed in our columns. We do not, however, intend to make any comparisons, but this can be said of the new-comer—that it is well up to the standard of its predecessors. Text-books of this description are of necessity brief, or they are not read, and the author has sacrificed much to attain this object. Yet there is a breadth of view, a comprehensiveness of plan, and a surprising completeness of detail in little space. It is written throughout in a concise manner, and its numerous illustrations and plates are decidedly good.

The author is obviously influenced by continental ideas, but his discrimination is a wise one, and, on the whole, he follows British methods. The dividing up of the chapters on the various forms of insanity into paragraphs dealing with the ætiology, physical signs, mental symptoms, diagnosis, etc., is very convenient.

The opening chapters on psychology are sufficiently full for the average student. The diagnosis of insanity, its general causation and classification form separate chapters, and are treated in a simple and uncomplicated fashion; we note that in giving definitions of insanity he leaves Dr. Mercier severely alone.

The pathology of insanity is very briefly dealt with, perhaps too much

so, though the many conflicting views and uncertainties which distinguish this subject may be a justification.

In discussing the diagnosis of general paralysis, mention is made of the presence of a leucocytosis in the cerebro-spinal fluid, but it is surprising to have to turn to the chapter on pathology to find any mention of the Wassermann reaction in connection with this disease.

The history of insanity and its incidences is well written, and forms an excellent opening chapter; and the concluding chapters on prognosis, legal relations of insanity, and general treatment are especially good.

Dr. Cole is to be congratulated on producing a plain and very readable book, which fulfils the object for which it was written, and will be of value as an introduction to the study of psychiatry and of special service to the student and the busy practitioner.

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*London Public Health Administration.* Pp. 59. Fcp. 8vo. Price 2s. 6d. net. London: Longmans, Green & Co.

*How to Diagnose Smallpox.* Pp. 104, with 11 Illustrations. Demy 8vo. Price 3s. 6d. net. London: Smith, Elder & Co.

*The Administrative Control of Smallpox.* Pp. 86. Demy 8vo. Price 3s. 6d. net. London: Longmans, Green & Co.

All by W. McC. WANKLYN, B.A. Cantab., M.R.C.S., L.R.C.P., D.P.H.

It is unusual to notice publications such as these, so foreign to psychiatry, in the *Journal*, but in this case there are circumstances which warrant a departure from established custom.

In the first place, the writer of this notice passed through an extremely anxious time when medical officer in an asylum during the outbreak of smallpox in London some twelve years ago. *How to Diagnose Smallpox*, if it had then been available, would have saved him weeks of worry, and would have been invaluable in dealing with some difficult and atypical cases which actually occurred.

In the second place, Dr. Wanklyn, prior to joining the London County Public Health Service, was a medical officer at Bexley, and afterwards at the Ewell Colony, Epsom, and is thus not a stranger to psychiatry. It was a distinct loss to lunacy and a gain to public health when he transferred his services from one to the other. It is rare to find one who so combines intense accuracy, deep powers of observation, and fidelity of description, with a lucidity and simplicity of expression which is apparent to anybody who reads these books without the added personal knowledge of the author.

It might also be mentioned that Dr. Wanklyn and his then colleague, by their skill, knowledge, and devotion displayed in a unique degree during the smallpox outbreak in London, did a great public service, and saved London from the spread of a dreadful scourge.

It is thus with every pleasure that we draw our readers' attention to these publications.

The first is a very useful summary showing the principal authorities, with the origin, service, and powers connected with public health administration. It is a handy volume, which, although of most use to

a London practitioner, could well find a place on the desks of all who have to do with public health and local government.

The other two books on smallpox should be in the library of every medical man. They are absolutely reliable in point of fact, and there is no greater authority on the subject than Dr. Wanklyn. It will be a great advantage to have at hand such sure guides when this most difficult of all diseases makes its next appearance, as it inevitably will do unless vaccination again becomes compulsory.

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### Part III.—Epitome.

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#### Progress of Psychiatry during 1913.

##### FRANCE.

By Dr. RENÉ SEMELAIGNE.

Psychiatry has advanced with such rapidity that Dr. Régis, Professor of Mental Diseases in the Faculté de Bordeaux, determined to publish a fifth edition of his well-known *Précis de Psychiatrie*. The book seems to be almost a new one. Among the principal interpolations we find remarks concerning eugenics in psychiatry, the psycho-analytic theory of Freud, disorders and deliria of imagination, syndromata of Ganser, manic-depressive insanity, dementia præcox, mental confusion, systematised psychoses, amaurotic family idiocy, presbyophrenic dementia, chronic alcoholic psychoses, *endocriniennes* psychoses, pathological anatomy and treatment of general paralysis, lunacy law, penal responsibility, provision for lunatics in France and colonies, appointment of medical officers in asylums, divorce and lunacy, criminal lunatics, testamentary capacity, models of medico-legal statements, etc.

Exo-toxic psychoses constitute a new chapter, and find place for the first time in France in such a publication. The author divides such disorders according to the cause—intoxications, infections, and parasitoses. The first group relates to psychical troubles resulting from insolation and abuse of opium, or cannabis indica. In tropical countries a continued solar action causes nervous disorders more or less severe—tropical neurasthenia, *soudanite*, etc. Such disorders affect neuropathic and predisposed people mostly, or those debilitated by chronic paludism, diarrhoea, dysentery, syphilis, a previous attack, but principally by alcohol, opium, or morphia. So the psychical influence of hot climates conduces to impulsiveness, cruelty, etc. Consequently it seems to be best to send to the colonies people free from any mental defect. Those who, being hereditarily or casually predisposed, settle in colonies and become intoxicated, court mental ruin.

But the genuine psychoses of insolation are states of mental confusion, and show the symptoms of all the intoxications—acute hallucinatory delirium, amnesic mental confusion, paralytic syndrome, etc.

Intoxication by opium smoking is now observed, not only among European people living in far Orient, but also in our sea-ports and even in Paris. The psychical effects of opium vary according to the personal constitution, and the nature or dose of the drug; but smokers progressively reach a state of psychical inactivity, amnesia, aboulia, loss of moral sense, with a considerable lessening of all intellectual faculties, affections, and feelings, and a propensity to immoral conduct, sexual offences, swindling, robbery, desertion, etc. Opium smokers generally are propagandists, take pleasure in proselytism and extol the marvellous effects of the divine drug. In fact, there is merely an illusion of mental hyperactivity, sometimes provoking deeds more or less strange, phantasmagorical, borrowed from a toxical dream. Such a condition is followed by depression, torpidity, powerlessness, and finally by psychical and physical decay. Its most rational and efficacious treatment seems to be a complete interdiction of selling opium, and Dr. Régis opines that it is rather shocking to see a government warranting the traffic of opium or manufacture of such a drug.

Ingestion or inhalation of cannabis indica causes a special inebriation, characterised by a state of euphoria with cœnæsthetic sensations of modifications in physical personality, lightness of the body, alterations in the orientation for space and time, and frequently convulsive symptoms. Chronic intoxication determines a precocious moral decay with cerebral asthenia, deficiencies of memory, and general decrepitude.

Among infections and parasitoses, the author describes the psychical disorders observed in paludism, sleeping-sickness, cholera, leprosy, and some diseases, such as exanthematous typhus, dengue, Mediterranean fever, beri-beri, yellow fever, plague, dysentery, liver abscess, snake-bites, etc.

Psychical disorders of paludism may be observed during febrile paroxysm or afterwards. The former present a form of hallucinatory mental confusion more or less acute. Psychical post-febrile disorders appear either just at the point of defervescence or at the termination. The delirium of defervescence generally appears as an acute mental confusion with stupidity; the psychosis of convalescence nearly always is an asthenic mental confusion. The patient does not remember anything, at least in acute cases. Sometimes delusions remain which are only sequelæ of a delirious dream, and a secondary systematised delirium, which originates in post-oneiric delusions.

The psychoses of chronic paludism make their appearance during the paroxysm, or without any paroxysm. The psychoses of the paroxysm comprise a recurrence of paroxysm, and sometimes take its place as a psychical equivalent. Frequently in cases of very old chronic paludism the paroxysm progressively loses its specific appearance. The psychosis is preceded by painful headache, and the paludal paroxysm appears either with genuine stages of shivering, warmth, sweating, or with only one of those stages. Then the patient begins to wander. Such delirium appears as an active dream, professional, fantastical, painful, or terrific, sometimes as a fit of somnambulism. The delirium often carries back the patient to the time when he began to suffer paludism, and the same illusions invariably reappear. Such paludal deliria of paroxysm generally are not lasting and infrequently continue beyond a few days,



but they reappear under the same conditions and with the same aspect in every paroxysm. The patient remains confused and dull, with headache and a more or less complete amnesia of the delirium.

There are also in chronic paludism, psychoses without any paroxysm. They are not well known, and a distinction seems to be difficult from the genuine psychoses which affect people suffering from paludism. Prolonged, polymorphous, presenting ideas of persecution and grandeur, they are recognisable by depressive and amnesic features, and principally by a special degree of physical and psychical asthenia, mental confusion, and oneiric manifestations. Such psychoses may show a remittent, intermittent, or circular type, and sometimes end in chronicity. They often are consecutive to paludal neuroses, and principally to neurasthenia. It is sometimes difficult to determine a precise diagnosis between paludal and alcoholic psychoses besides, some patients simultaneously present signs of both.

In sleeping-sickness, the onset of psychical disorder is often insidious. Among the signs of a general infection one may observe somnolency, physical and mental prostration, hypochondria, etc. Progressively appear alterations in temper, alternation of excitement, and depression, deficiencies of memory, impulsive or extravagant actions, family troubles, moral perversions, and emotional indifference. Such disorders increase, the face becoming stupid, the patient dirty, bulimic, disregards his duties, perpetrates extravagant or immoral actions, and makes homicidal or suicidal attempts, etc. There follows mental confusion with a more or less rapid dementia. Finally, one observes tremor, motor inco-ordination, amblyopia due to œdema and pupillary changes, dysarthria, paretic troubles, and symptoms of neuritis or myelitis. Sometimes there appear bulbar symptoms, epileptoid or paretic ictus, sudden coma, or acute delirium.

The psychosis of cholera is a typical infective psychosis. Leprosy produces a serious and amnesic mental confusion, with cœnæsthetic state. Exanthematous typhus sometimes gives rise to a cerebral torpidity and nocturnal dreaming, which may produce in exhausted people, prisoners, and paupers a stuporose and delirious mental confusion. Such a psychosis may be early and initial, but its onset coincides most generally with the beginning of defervescence. A psychosis appearing on the thirteenth or fourteenth day shows slight depression, with a common tendency to paretic and convulsive troubles and finally vigil coma. The noisy and hallucinatory delirium, with somnâmbulic features ordinarily begins at the end of the first week. Dengue may produce mental disorders comparable to those of influenza. Myasthenia is frequently united to psychasthenia and psychical dulness. Convalescence is slow and difficult. Mediterranean fever may cause mental troubles, and when such psychoses become intense the prognosis is serious, especially among old or exhausted people. In beri-beri, one may frequently observe disorders of memory with a primary or secondary mental confusion. Yellow fever may present all degrees of psychoses, from dreaming to acute delirium with impulsiveness, and death is sometimes preceded by a period of euphoria. Plague may give rise to severe psychoses with dysarthria, reminding one of some of the states of rapid general paralysis. The cerebral apathy of such patients is

proverbial. In dysentery and chronic diarrhoea of the tropics absence of psychical disorders is a rule.

In the colonies, psychical troubles also occur in abscess of liver, consecutive to snake-bites, and in all toxic infections and parasitic diseases.

Dr. Régis thinks that it would be impossible to eliminate from the army and navy psychical degenerates, as well as physical degenerates. The mental state should be studied by the examining board, at the time of enlistment, and also during active service. A very common mental disease among officers is general paralysis; one may also observe traumatic and alcoholic psychoses, maniacal and melancholic states, and systematised delirium. Thus, amongst soldiers we find all the psychopathic disorders, such as alcoholism, systematised delirium, maniacal and melancholic states, epilepsy, nostalgia, epidemic suicide, etc., but degeneracy prevails, with or without delirium. Such degeneracy is either simple (unstable, odd and eccentric people, feeble-minded, imbecile and idiot), or complicated (neuropathological or psychopathical manifestations). Amongst abnormal soldiers, pathological fugue is most frequent (illegal absence or desertion). Consequently, when a soldier runs away, it is necessary to carefully study his mental condition. In all cases, the medical expert must observe, ponder, and wait before deciding upon responsibility or simulation.

The work of Dr. Régis, improved and brought up to date, is certainly the best and most complete hand-book of mental diseases existing in France.

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## GERMANY.

By Dr. J. BRESLER.

Since my last report the interest of German psychiatrists has been almost wholly absorbed in observing the results of trials of *Abderhalden's method* (dialysing method), of which I have briefly made mention in the *Journal of Mental Science*, July, 1913, pp. 514, 515. It may be said that at least in thirty to forty psychiatric clinics and asylums trials are being made with this method, and that perhaps as many treatises on the practicableness of this method for the diagnosis of some mental diseases have been published. It is impossible in a short report to give an approximately complete picture of the state of the question; but even if this were possible, it would be to little purpose, for the method is much too complicated to be learnt by a description. It is advisable to learn the method in the laboratory of an asylum where it is thoroughly practised. Such an asylum as Illenau, near Achern, in Baden, I can recommend, where Dr. Römer and Dr. Bundschuh apply themselves to it diligently, and with marked success. It requires many weeks at least to master the method thoroughly. I will try to communicate the results which Dr. Römer, in accordance with the results of other authors, has described in my psychiatric-neurological weekly of February 28th, 1914. The serum of bodily and mentally sane people, of constitutionally psychopathic persons, and of manic-depressive patients is free from

protective ferments. In dementia præcox, destruction of the cortex cerebri and the sexual glands (testes or ovaries) is nearly constantly found, sometimes of the thyroid gland, and seldom of the suprarenal glands. In paralytic dementia, there is destruction of the cortex cerebri, but no destruction of the thyroid gland and sexual glands. In mental disorders caused by thyroid disease, destruction of the thyroid gland is found. It is an important fact that by the Abderhalden method it is possible to distinguish dementia præcox from manic-depressive insanity and from constitutional psychopathic states of mind. Dementia præcox thereby is proved to be a form of insanity caused by morbid anatomical and chemical changes in the brain. In epilepsy also destruction of the cortex cerebri was found. The Abderhalden method, therefore, is of the greatest importance to psychiatry. With due estimation of this fact, the boards of asylums have granted to physicians several weeks' leave and the necessary expenses, that they might make themselves thoroughly acquainted with the method in the laboratories where it is habitually employed.

The continually increasing expenditure on the care of the insane has induced two Prussian provincial administrations, those of Pomerania and of Silesia, to publish and to circulate a memorandum on *the causes of insanity*. In it attention is especially drawn to alcohol, syphilis, and heredity as the most important causes of mental maladies.

The stock of medicaments for nervous and mental diseases has been enriched by a new and very useful one, *viz.* "Diogenal" (factory, E. Merck, Darmstadt). It is acidum dibrompropyldiethylbarbituricum, a sedative, which combines the action of bromide with that of veronal, but is four times less poisonous than veronal; it acts as a calmative, but not a sleep-producing agent. It is given in doses of 1 to 2 gr. (*vide* Prof. Dr. Heinz, Director of the Pharmacological Institution of the University of Erlangen, and Dr. Mörchen, *Munch. Med. Wochensc.*, 1913, No. 48).

Some years ago, in this Journal, I reported the enactment of a new law relative to the care of the insane in the Grand Duchy of Baden. Now the Kingdom of Saxony has also passed a new law respecting the care of the insane in asylums (from December 12th, 1912); it regulates the relations of the asylums of the country to the local boards for the poor, and to the magistrates. As regards the administration of the law, the reception and discharge of patients, etc., detailed regulations have been laid down from September 12th, 1913. The law, and the regulations for its administration, are published in *Psych. Neurol. Wochensc.* of November 22nd, 1913.

An epochal advance has been made in the department of the surgery of the brain, which is also applicable to the treatment of some patients in asylums, by the operation of *opening the brain-ventricles by piercing the corpus callosum*, as G. Anton and F. G. von Bramann have done in fifty-three cases. After opening the cranium by means of Doyen's or Dudek's trephine, the dura mater is slit up and a cannula is guided along the falx cerebri as far as the tectum of the ventriculus, and thrust through the *corpus callosum*. After the necessary quantity of fluid has escaped the cannula is removed. There were treated seventeen cases of hydrocephalus, five of tumour of the hypophysis, twenty-three of tumour in the

brain-ventricles, four of epilepsy, five of non-purulent meningitis, one case of acrocephaly. As a result of the operation itself no patient died. In very many cases, directly or indirectly, the operation favourably influenced the malady by relieving pressure; in some cases it facilitated the diagnosis. Details about the operation and interesting reports of cases are recorded in the book: *Treatment of Congenital and Acquired Brain-Disease by the Method of Piercing the Trabs*, by G. Anton and F. G. v. Bramann, with 44 illustrations and 10 tables, 1913. Berlin: S. Karger, price 4 M.

Of the *International Illustrated Work on Asylums*, announced in the last report, the first volume has appeared; it contains 372 pages, and comprises illustrated descriptions of asylums in Brazil, Belgium, Holland, Germany, Denmark, Norway, Russia, Italy, Hungaria, Servia, Bulgaria, and Japan. The second volume is in preparation, and will probably come out this year. It would be very gratifying if the English asylums, too, would co-operate in the work. The languages used in the publication are German, English, French and Italian.

English psychiatrists making a tour up the Rhine to Switzerland near Constance on the Lake will have an opportunity of seeing the newest asylum of the Grand Duchy of Baden. It is situated 7 km. from Constance, ten minutes by railway direct from the station of Reichenau on the Constance-Singen Line, in the midst of a magnificent landscape. It was opened in the presence of the Baden ministers on October 11th, 1913. The Director is Dr. Oster. A description of it is to be found in the above-mentioned illustrated work on asylums.

Of more general interest may be the following *classification of mental diseases*, which has been proposed and accepted by the statistical commission of the German Society for Psychiatry. It is based on the schedule, which Schüle and Römer of Illenau (Baden) and Fischer of Wiesloch have laid down.

(1) *Traumatic brain diseases*.—(a) Delirium traumaticum; (b) dementia traumatica; (c) epilepsia traumatica.

(2) *Mental diseases connected with gross brain diseases*.—(a) Tumours; (b) abscesses; (c) sclerotic diseases; (d) Huntington's chorea; (e) other brain diseases.

(3) *Mental diseases from poisons*.—(a) Acute toxic conditions; (b) chronic toxic conditions (morphinismus, kokainismus, etc.).

(4) *Alcoholismus*.—(a) States of acute alcoholic intoxication; (b) delirium tremens and alcoholic insanity; (c) Korsakoff's psychosis; (d) alcoholic epilepsy, and habitual epilepsy of drunkards; (e) chronic alcoholismus.

(5) *Mental diseases connected with somatic diseases*.—(a) Infective diseases; (b) chorea; (c) heart disease; (d) uræmia; (e) eclampsia; (f) states of exhaustion.

(6) *Psychoses connected with lues cerebri and tabes*.

(7) *Paralysis progressiva*.

(8) *Senile and presenile diseases*.—(a) Dementia senilis; (b) presbyophrenia; (c) senile persecutorial insanity; (d) Alzheimer's disease.

(9) *Arteriosclerotic disease*.

(10) *Diseases connected with morbid changes of the glandula thyroidea*.—(a) Cretinismus; (b) myxœdema; (c) morbus Basedowii.

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(11) *Endogenic dementia*.—(a) Dementia præcox; (b) forms of paranoid dementia.

(12) *Epilepsy*.—(a) Genuine epilepsy; (b) affective epilepsy; (c) tardive epilepsy; (d) other forms of epilepsy.

(13) *Manic-depressive states and insanities*.

(14) *Hysterical temperament and insanity*.

(15) *Other psychogenic diseases*.—(a) Traumatic neuroses; (b) psychogenic psychoses of prisoners; (c) induced insanity (*folie à deux*); (d) emotional psychoses; (e) other forms.

(16) *Paranoid and querulous states and paranoia*.

(17) *Psychopathic states*.—(a) Neurotic states; (b) imperative ideas ("Zwangsvorstellungen"); (c) sexually perverted persons; (d) states of instability (*Haltlose*); (e) psychopathic swindlers and deceivers (*Schwindler and Betrüger*); (f) congenital criminals (*delinquente nato*); (g) other forms.

(18) *Imbecility and weakmindedness*.

(19) *Idiocy*.—(a) Syphilitic; (b) encephalitic; (c) hydrocephalic; (d) other forms.

(20) *Doubtful cases, and not cleared up*.

(21) *Not insane and not psychopathic*.

Our English colleagues who are interested in the careers of German psychiatrists will no doubt be pleased to hear that Dr. Heinrich Schüle, since 1887 Director of the Grand Ducal Asylum of Illenau near Achern, in Baden, honorary member of the Medico-Psychological Association of Great Britain and Ireland, on July 4th, 1913, had the rare experience of celebrating his jubilee of fifty years in office, in the full enjoyment of mental activity, and excellent bodily health and vigour. Numerous acknowledgments and honours were bestowed upon him, and a number of former and present physicians of Illenau compiled a work in honour of the occasion containing sixteen scientific articles, occupying some 280 pages of printed matter.

## PORTUGAL.

By Dr. CAETANO MARIA BEIRÃO.

In recent years, the study of nervous and mental diseases has made some progress in our country.

Not long ago, psychiatry and neurology were studied together with pathology in our universities, without being a speciality, so that neither developed as they ought to have done, nor were young physicians anxious to dedicate themselves to any of these special branches of medicine.

In those days, the courses of psychiatry were limited to voluntary lectures by the late Dr. Miguel Bombarda, and Dr. Julio de Mattos, the former of the Lunatic Asylum of Lisbon, and the latter of Oporto.

But the reform of medical studies in 1911 improved this state of affairs, and placed Portugal in this matter on a level with the most advanced nations. By this reform were established the Chair of Psychiatry at the University of Coimbra, held by Prof. Padua, another at the University

of Oporto, by Prof. Magalhaes de Lemos, and two at the University of Lisbon—one of General Psychiatry, held by Dr. Julio de Mattos, the other of Forensic Psychiatry, by Prof. Sobral Cid, who came from the University of Coimbra.

The courses are bi-annual, and are compulsory for students in their final year.

Prof. Julio de Mattos commenced his course with a most interesting general survey of psychology, passing in review all the different psychoses. These lectures were worthy of the man, who is well known in the psychiatric world by his books and professional attainments, and the most interesting were those on general paralysis, with clinical demonstrations, from its onset to its nearly always fatal termination. He treated the disease from both medical and legal aspects.

Dr. Sobral Cid has given very interesting lectures on precocious dementia, which were quite in keeping with his great reputation, and at the same time showing examples of each form of that psychosis.

I have also to record that there was established at the University of Lisbon a Chair of Neurology, to which was called Dr. Egas Moniz, a professor in the University of Coimbra. He has given eloquent lectures on general paralysis and hysteria.

At Oporto, Prof. Magalhaes de Lemos opened a course of psychiatry on the lines of Prof. Julio de Mattos.

Following these changes in the teaching of psychiatry, there is now a proposition to reform the medico-forensic service. Courses for legal medicine will be established at Lisbon, Coimbra and Oporto, including forensic psychiatry, judiciary psychology and criminal anthropology. These are quite necessary, for the medico-forensic studies are very unsatisfactory and require remodelling accordingly to modern science.

Many books on psychiatry were published during the year, but I shall mention only the more interesting ones.

First of all was Dr. Julio de Mattos' work entitled *Loucura* (Insanity). It is a re-edition of his book published under the same title in 1889, but though the author follows the same programme, the book is full of new material. The chapter dedicated to paralytic dementia is most important. The illustrious alienist treats it first from the clinical point of view, following the same classification as Doutrubante, and then from the medico-legal aspect, asserting the presence, as a rule, of criminal irresponsibility and civil incapacity, both when the disease is active and during periods of remission.

This statement is absolutely correct, and important because our laws do not admit of limited responsibility. There are two new subjects treated. First, the *syndroma de Cotart*, regarding which he shows, after giving its description and origin, its enormous importance in the prognosis of melancholy. *Psychopathic flights of ideas* is the other subject. He first defines them, and then points out their differences in idiocy, in delirium, in paranoid states, in degenerates, etc., mentioning their special character in each. This subject, which since 1851 has been closely studied by Morel and Dagonet, is splendidly treated by Prof. Julio de Mattos. *A Loucura* is indeed a most interesting book, and full of learning.

Another work which ought to be mentioned is that which Prof. Egas

Moniz presented when he entered the University, called the *Sexual Life*. It was re-published this year, the first edition being exhausted. It consists of two large volumes; the first deals with sexual physiology, and the second with its anomalies.

Correia Mendes (Oporto) published a volume, *The Portuguese Criminals*, which figured as his thesis, at the Concourse of the Faculty of Science at Oporto, also a pamphlet entitled *A Habitual Delinquent*. The former is a study of criminal anthropology in which the author, after describing criminality in Portugal, and the relative frequency of various crimes, makes a comparison with other nations, affirming that crimes have been increasing in Portugal, especially those committed against the person. Afterwards he treats of the criminals according to their nativity, the places where the crimes were committed, the habits of the criminals, and all the associated circumstances, and forms the conclusion that the greatest criminality exists in the most populous and manufacturing centres. Then he studies the morphology, biology, and psychology of the criminal, giving his opinion that of all the characters found in the different types of criminal the most persistent are: affective dulness, loss of moral sense, vice, deficiency of will-power, and a marked intellectual poverty. The pamphlet by the same author records the anthropology of a delinquent, with notes regarding his ancestors, his morphology, psychology, and *esfignogramas*. Correia Mendes is highly respected as a criminal anthropologist.

Prof. Ricardo Jorge published a pamphlet on the painter of Toledo, El Greco. This is a new biographical, critical, and medical contribution to the study of the painter, Bomenico Theotocopuli. He gives an appreciation of his paintings, and judges, from the biographical data he obtained, the psychopathic state of the artist, who suffered from periodical insanity, and whose work showed deterioration during his attacks as compared with the work he did during remission. The development of a psychosis occurs now and then amongst individual famous artists and authors; the book written in Portuguese—*de artista e classico*—would have made the reputation of the author if such had not already been established.

A young doctor, Ernesto Roma, presented a study of microcephaly as his thesis at the end of his course. It is a very complete investigation of four cases, and shows great industry and keen powers of observation. The author promises to describe a further seventeen cases of the same condition.

Lara Alegre has written a thesis on hallucinations, studying their origin and dividing them into three groups. He shows their semiology, and adds some observations on hallucinations in criminals. Finally, he treats the subject historically. This work was very much appreciated by his teachers.

Alberto Pessoa, of Coimbra, has written a pamphlet on forensic psychological study which is well worthy of perusal.

Of the articles published in the medical reviews I have to mention a report by Prof. Julio de Mattos on a murder and attempted suicide by a degenerate, whom he declared to be irresponsible on account of his numerous stigmata.

A very notable contribution to forensic psychiatry was published by Dr. Sobral Cid.

Prof. Antonio Padua, of Coimbra, published some cases of infanticide, attempted homicide and hystero-epilepsy which were very interesting.

Dr. Magathaes de Lemos, of Oporto, contributed a report of a medico-legal examination of cases of vagabondage and Jacksonian epilepsy. There was a very notable case in which vagrancy and fits followed injury.

An article was also published by Dr. Sobral Cid, entitled *Fronteiras da Loucura*, describing a patient who would generally be held to be sane although he was really a paranoiac.

Dr. Silva Amado, of Lisbon, published, with photographs, an account of an examination made of the cranium of an idiot boy, and other cases caused by meningitis.

Dr. Costa Ferreira, physician and director of an asylum for children (Casa Pia), speaking about incontinence of urine, says that he thinks it can be cured, or improved, by employing suggestion.

Dr. Correia Mendes, of Oporto, states that some articles published in a journal—*O'Echo de Rilhafolles*—were written by a patient of that hospital.

In the *University Review of Coimbra*, Dr. Alves dos Santos published an article on psychology and pedagogy.

The writer of this epitome has written a report on a case of attempted homicide made by a precocious dement who was considered to be irresponsible. The most interesting point in this case was that after two years this patient left the asylum in a very satisfactory state of remission.

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## Epitome of Current Literature.

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### 1. Physiological Psychology.

*Obliviscence and Reminiscence. (Second Monograph Supplement, Brit. Journ. of Psychol., 1913.) Ballard, P. B.*

This consists of an elaborate and very interesting essay on these subjects. By obliviscence is meant forgetting that which has been known, and by reminiscence remembering that which has been forgotten. Mr. Ballard found, in testing, by setting them to learn a set of verses, a class of boys said to be very defective in memory, that a majority of them were able to write out more lines with fewer mistakes after an interval of two days than immediately after they had learnt them. This observation led him to institute a series of tests on a large scale, which must have cost an immense deal of time and labour to carry out, and subsequently to examine and tabulate the results. The curious fact that what is learnt is remembered better after an interval of two days than immediately after learning was found to be true of an immense majority of youngsters, numbering several thousands, of all ages up to twenty, and of all classes; and not only do they then remember more completely, but they remember with less effort. It is true that some of what can be repeated immediately after learning is lost in the interval, but so much more is then remembered that there is a gain on balance that may amount to anything from 10 to 90 *per cent.* or



more. The gain is greatest after an interval of two days, but continues, though to a diminishing extent, for several days more. Children differ enormously in the degree to which they gain, but generally the gain is greater the younger the child, and diminishes with age, and the ratio of that which is reminiscently recovered to that immediately remembered is greatest of all amongst mentally defective children, though the absolute amount that they remember is on both occasions less than in normal children. Various hypotheses to account for the fact of reminiscence are examined by the writer, who arrives at the conclusion that it is due to an inertia of the nervous system, which, as it does not yield at once to an impression, so does not at once cease yielding. The essay is well worthy of careful study.

CHAS. MERCIER.

## 2. Clinical Psychiatry.

*Manic-Depressive Insanity.* (Rev. *Neurol.*, May 15th, 1911.) Benon, R.

The writer expresses the opinion that his colleague, J. Tastevin, has brought a new conception into the study of periodic psychoses.

Dr. Benon maintains that the phase of "depression" in manic-depressive insanity really consists in an exhaustion of the central nervous system analogous to the neurasthenia of Beard. This "asthenia" is not identical with pure melancholia, in which the lesson is chiefly emotional. Tastevin originally described as "asthenia" the motor and ideational impairment following physical or emotional lesions. He noticed that on its disappearance a maniacal state supervened, and he coined the name "hypersthenia" for this condition, which was the antithesis of asthenia. The twofold attack received the name of "asthenomania," and was observed to occur after epileptic fits, traumatism, childbirth, etc.

The chief signs of asthenia are :

- (1) Amyosthenia, a feeling of malaise and heaviness of body.
- (2) Anideation, retardation of ideas, with difficulty in recalling them.

This state is accompanied usually by constipation, the expression of intestinal asthenia.

(3) Diminution of affection for near ones, with an increased tendency to uneasiness and depression. Besides this the patient worries about his disease, and may contemplate, and even carry out, suicide.

The "stupor" of older writers is really an exaggerated form of asthenia.

Dr. Benon draws the following distinctions between true melancholia and asthenia :

Melancholia begins with a depressed emotional state which is rationalised ; asthenia exhibits a sudden onset. Delusions, confusional attacks, and hallucinations may occur in melancholia, whilst morbid ideas in asthenia are the outcome of the social results of the malady.

Finally, melancholia resolves slowly and rarely recurs, whilst abrupt termination and periodicity are the characteristics of asthenia.

Since asthenia is thus a nervous and not a mental disease, neurasthenia is closely related to it. But neurasthenia is distinguished by its

slow development, its relation to a definite external cause, and by the headache and backache which may be present.

The importance of asthenia for psychiatry lies in its social results, especially in the tendency for patients to harbour thoughts of self-destruction. Since the primary lesion is not emotional, cheerful emotions, however, may co-exist with the disease: Dr. Benon thus accounts for the mixed states described in manic-depressive insanity.

Neither asthenia nor hypersthenia is due to an external cause. Similar mental states which are thus caused are not identical with them, nor are fluctuations in persons with an exaggerated emotional equipment. But the writer recognises a "secondary asthenia" which may be the result of a depressed emotional state.

H. W. HILLS.

*Chronic Mania.* (*La Nouv. Icon. de la Salpet.*, March-April, 1913.)  
Benon, R., and Denes, P.

The writers describe in detail a case of hypersthenia as defined by J. Tastevin.

The patient entered the asylum at the age of forty with pure melancholia. This condition gave place six years later to hypomania, which has persisted unaltered for twenty-eight years.

The patient, now *æt.* 74, exhibits hypermyasthenia: his step is alert, his speech easy and clear; he exhibits active mimicry and lively gestures; he laughs, smiles, sings and dances. There is marked mental excitation, attention is lively, judgment normal, memory rapid and precise. The patient shows a bias for erotic and religious ideas, is prone to mockery and practical jokes, and is easily roused to anger. His activity is sometimes normal, sometimes disorderly; he collects rubbish and is always untidy. Habitual insomnia is a feature of the case.

There follows a detailed account of the patient's daily life for nearly a month, the record bearing out the above description.

Apparently the patient's original melancholia was connected with a disappointment in love. The writers think that asthenia developed, and that this was gradually replaced by hypersthenia. They suggest that the old time "fool" was an example of this mental state, and remark that their patient is the life of the asylum.

H. W. HILLS.

*"Exhibitionism" and Chronic Lead Poisoning* [*Exhibitionnisme et petit saturnisme*]. (*Bull. Soc. Clin. Méd. Ment.*, Nov., 1913.) Briand, M., and Salomon, J.

In the April number of the same journal these authors drew attention to the association of lead poisoning with various forms of sexual perversion, especially of the "exhibiting" type. They now record another case in which the same symptoms co-existed. The subject is a house-painter, *æt.* 35, who, after a youth of extreme hardships at the hands of a violent father, ran away from home at the age of nineteen, lived from hand to mouth for some years in Paris, and finally got employment as a painter and decorator. He married at the age of twenty-seven, and has three children. It was while his wife was pregnant with her first child that the symptoms of erotic obsessions began in the patient. He

complained of headaches, sensations of being strangled—having a lump in his throat, etc.—and the sight of little girls in the street produced violent emotions in him. The urgent idea of exhibiting his genitals to them took hold of him, and in spite of his resistance he had to do so. He had an orgasm, followed by an attack of vomiting, and then felt relief. There is no doubt that one has to deal here with a true obsession.

The patient himself says that it is "the disease of his trade," and that he knows several similar cases among his workmates. At the same time it is noted that he drinks, and that the impulses to expose himself are strongest after a drinking bout. Genital obsessions have also been noted in alcoholics, so that possibly the cause in this case may not be lead alone.

W. STARKEY.

*Physical Disorders in Dementia Præcox* [*Die Körperlichen Störungen bei der Dementia Præcox*]. (*Psychiat. Neurol. Wochensc.*, 1913-14, Nr. 29-33.) Michel, J.

This valuable series of articles, which contains a recapitulation of the findings of many investigations, lends itself badly to condensation, but is well worthy of study in full.

The frequency of bodily symptoms in dementia præcox is much disputed. The causes of these discrepancies are various. The material investigated by different observers is not always the same; some have studied recent cases in clinics, others the collection of old-standing cases in asylums; moreover, the boundaries of the disease are somewhat vague. Lastly, some of the abnormalities described are sufficiently elusive to permit of difference of opinion as to their presence or absence in a given case.

In general probably three fourths of cases of dementia præcox show physical abnormalities of some one of the kinds detailed below; these tend, on the whole, to be more marked and more frequent in cases of long standing, but to this rule there are exceptions.

The findings of various authors are summarised in regard to the following:

*Anthropometric abnormalities.*—Stigmata of degeneration, and deformities.

*Ocular disorders.*—(a) Pupillary signs. Of these the most frequent are dilatation, slight irregularity, slight inequalities of size (sometimes alternating), spontaneous variations in size without determinable physical or psychic cause, and certain changes in reaction: Decrease in speed or amplitude of the light reflex is often to be observed; complete loss of this reaction is rare, as is loss of that associated with convergence. Disappearance of the variations with psychic states and peripheral stimuli is common; these variations may reappear with deterioration. All these signs are most often met with in katatonic states. They may be persistent or periodic, and abnormalities of reaction often only appear after repeated stimuli.

(b) Changes in the fundus, and in the field of vision have been described by certain writers.

*Cardio-vascular abnormalities.*—Slowness of pulse is common. Peri-

odic fluctuations without determinable cause (physical or psychic), and absence of rise in pulse-rate with rise in temperature have been often observed.

Disorders of peripheral circulation are among the commonest bodily phenomena of the disease, including local anæmia, active or passive hyperæmia.

Unilateral or bilateral flushing of the face, and localised areas of flushing elsewhere are fairly frequent.

Local cyanosis is very common, and that of dementia præcox is characterised by the extreme slowness with which it returns to areas rendered anæmic by pressure; in this respect the condition resembles that produced by section of vaso-motor nerves.

Dermatographia is not uncommon. Œdema occurs with or without congestion and without any discoverable organic basis. Trophic disturbance may follow this.

The findings as to blood-pressure, and its alterations during various episodes of the disease, are very contradictory.

Certain authors regard as specific for dementia præcox the fact that peripheral stimuli (especially painful ones), produce no change in the waves on a plethysmographic tracing corresponding to pulse and respiration. This absence of change is stated to occur in various stages of dementia præcox, but not in other dementing processes.

*Changes in the blood.*—A reaction has been described as occurring constantly and exclusively in dementia præcox, and allied conditions which arise in inhibition of hæmolysis by cobra venom. This has not been confirmed by subsequent investigation.

Other observers have noted frequency of Wassermann reaction, poverty in alexins (relating to this liability to septic infections), and presence of specific organisms or products of reaction thereto.

Fausser, investigating the toxic effect on different organs of serum from patients with various forms of mental disease, has found certain specific characters for that of dementia præcox. The possibilities of non-specific causes for changes in the blood, such as alterations in its circulation and in the taking of food, must be borne in mind.

Conflicting descriptions of changes in blood-cells have been published, and the above remark seems peculiarly applicable to such findings.

*Change in cerebro-spinal fluid.*—The only one found with any frequency is the presence of cholesterin during periods of katatonia and other marked symptoms.

*Disorders of motility.*—Characteristic changes in myographic and ergographic curves in katatonia have been recorded.

Increase of idiomuscular excitability, and of the mechanical and electric excitability of nerves, are to be found frequently.

The occurrence of concomitant contraction of antagonistic muscles is often to be observed in these experiments. No conclusive evidence has been obtained of an organic basis for the spasm of katatonia.

Involuntary muscular movements are common, and may be choreiform. Seizures of various kinds may occur, including fainting fits, apoplectic and epileptic attacks, as well as others of definitely psychic characters. No organic basis for these episodes has been determined.



*The superficial reflexes* are generally decreased, the deep exaggerated. Little is known of any functional anomalies of involuntary muscle in dementia præcox.

*Changes of sensibility.*—Analgesia is the commonest, but it is difficult to discriminate whether it is of organic or psychic origin.

*Paralyses of organic type* (both flaccid and spastic) have been described by numerous authors, and these may be sudden in onset and transitory or lasting.

*Speech disorders* resembling the aphasia and agraphia of focal lesions or the defects of general paralysis have been noted.

Many authors have ascribed the motor disturbances of katatonia to changes in the cerebellum, and cases showing histological changes in the latter have been recorded.

*Secretion.*—Numerous abnormalities of the secretions of the skin, of the digestive juices and of the urine have been noted, as well as disorders of menstruation and of internal secretions. The degree of relationship of these to the dementia præcox is a moot point; in special cases it appears to be close.

*General metabolism.*—Much evidence has been collected of diminished activity of metabolism in the form of decreased intake of various classes of food-stuffs, low output of katabolic products, and decrease of heat production with subnormal temperature.

The onset of the disease is attended by a preponderance of katabolism over anabolism. Loss of weight then, and at other periods, may occur independently of underfeeding and unrest.

*Trophic disturbances* in the hair (*e.g.*, alternations of colour or texture), in the skin, and in the bones (especially osteomalacia in women), have occurred in a large number of cases.

*Subjective symptoms.*—The headache, of which complaint is almost constantly made in the early stages, and certain of the visceral and cutaneous hallucinations probably have an organic basis.

The importance of these symptoms individually for differential diagnosis between dementia præcox and other psychoses (especially manic-depressive insanity and hysteria) is briefly discussed, as well as the prognostic value of each.

E. MAPOTHER.

### 3. Treatment of Insanity.

*The Treatment of Encephalopathies of Syphilitic Origin by Neo-salvarsan* [*Contribution à l'étude du traitement des encéphalopathies d'origine syphilitique par le néo-salvarsan*]. (*Bull. Soc. Clin. Méd. Ment.*, November, 1913.) Leredde and Juquelier.

A few years ago it was taught, even by Ehrlich himself, that in syphilitic affections of the nervous system the use of salvarsan was dangerous, and not likely to yield good results. In neo-salvarsan, however, we possess an agent less toxic, more easily administered, and, in the hands of careful workers, free from the accidents which followed the use of the earlier drug.

The chief point brought out in the paper under review is that in a long series of injections of neo-salvarsan in cases of general paralysis

in its later stages no bad symptoms occurred, and in only one case was there shown a marked intolerance to the drug. The patients were prepared as if for an operation, the strictest aseptic precautions observed, and they were kept in bed for some days after each dose. The dose employed varied from a quarter of a gramme to a gramme and a quarter, at intervals of five to seven days, in series of five injections. After an interval of a month the series is repeated, and in this way the process is continued until four series in all have been given.

No definite figures are given as to the total number of cases treated, and the number in whom improvement was noted, but the authors state that in a good proportion there was a marked amelioration in the mental symptoms, in several amounting to a complete remission, in which the patient was able to leave the asylum. Whether the improvement will be permanent or not it is of course too soon to say.

W. STARKEY.

*German National Sanatoria for Nervous Diseases in the year 1913*  
[*Die Deutschen Volksnervenheilstätten im Jahre, 1913*]. Bresler, J.

In this brochure, Dr. Bresler gives an interesting account of the initiation and progress of the movement for providing public homes or sanatoria for the cure and treatment of patients suffering from nervous diseases, which has been expanding steadily in Germany since the idea first took tangible shape in the founding of the "Schönow House," some fourteen years ago. As showing how slow new enterprises of this kind are in achieving popular appreciation and support, Dr. Bresler alludes to the fact that in the year 1913 (the 25-year Jubilee of the German Emperor), when the springs of benevolent endeavour were flowing unusually strong, as evidenced by the founding of numerous charitable institutions—many hundreds of them—not a single jubilee institution devoted to the treatment of nervous diseases occurring in those classes of the population who are possessed of little or no means was started—a proof that the ground had not yet been sufficiently prepared for the general adoption of the idea, and at the same time of the necessity of keeping prominently before the public the urgent necessity for establishments of this kind.

So far back as in 1891, Dr. Benda, of Berlin, in one of his published writings, *Öffentliche Nervenheilanstalten* (Public Nerve-cure Institutions), and Prof. Krafft Ebing, in an official communication to the authorities in Lower Austria, recommended the erection of nerve-sanatoria for the indigent and impecunious. But what, perhaps, most directly led up to the realisation of the views of these eminent specialists was the work of P. J. Mobius, *On the Treatment of Nervous Diseases, and the Equipment of Nerve Sanatoria* (*Ueber die Behandlung von Nervenkranken, und die Einrichtung von Nervenheilstätten*), which appeared in 1896. Following this at no great interval the preliminary steps were taken towards the founding of the first of such institutions that was erected in Germany, known as the "Schönow House." As this is more or less a type of other similar institutions which have since been erected, some details may be of interest as regards its origin, objects, and administration.

In the year 1897, in Berlin, six munificent donors handed over to a

committee of three a large plot of ground suitable as a site for a hospital, along with a capital sum of 200,000 marks towards the building of an institution for the treatment of nervous patients of small means. The most important member of the committee was Dr. Heinrich Laehr, who was known to the people of Berlin as a man of unequalled personal experience and reliable judgment as regards the treatment of mental and nervous patients, and he was considered the fittest person to prove indisputably in the most influential quarters, and amongst the most affluent circles of the imperial capital, the value and feasibility of the project. The committee, after arranging some preliminary matters, such as the size of the hospital, plans for further financing it, etc., proceeded to form a society, of which the organising body was constituted by a committee consisting of the original committee of three, and a board of trustees of twelve members, with Dr. Köhler, Director of the Imperial Board of Health, as chairman. Donations poured in to the young society in unexpected profusion. The largest single contribution, from an anonymous donor, was 115,000 marks (£5,750), and others followed with sums varying from 50,000 to 2,000 marks; over one hundred benefactors subscribed amounts from 200 to 1,500 marks, besides numberless smaller contributions, a proof that, notwithstanding the large offerings with which private charity had supported older benevolent undertakings—*e.g.*, sanatoria for lung disease—once the needs of indigent nervous patients were intelligently grasped, the appeal to society to come to their succour met with a prompt and liberal response.

On December 3rd, 1899, the home was opened, when the Lord Lieutenant of the Province of Brandenburg intimated at the inaugural ceremony that His Majesty the Emperor had had himself fully informed about the institution, and had noted its establishment with pleasure.

Under such particularly favourable auspices, then, this new venture in the cause of suffering humanity was launched; and, as Dr. Bresler, with some just pride, remarks: "It will, in fact, constitute an enduring title to renown for the 'Schönow House' that it dared to take the first practical step towards providing the means of cure for necessitous nervous patients, and of having thereby smoothed the way for further efforts in the same direction."

Dr. Max Laehr was appointed as medical director at the head of the establishment.

A real aid in the fulfilment of its objects was found by the Society and the home in the formation of a guild of ladies, who undertook the double task of, on the one hand, ascertaining the circumstances of needy patients and their relatives, of providing care for these, and obtaining means of support, and opportunities for work for patients on their discharge; and, on the other, of acting as an advisory body on domestic questions, such as the procuring, examination and preparation of food, the drawing up and keeping of inventories, and so on. Both the ladies' guilds (Berlin and Zehlendorf) rendered most excellent service, and are still, under the presidency of Frl. Mathilde Margraff, actively engaged in this work of philanthropy.

The initial cost of the building when first opened in 1899, including

furnishing and general equipment, was, in round numbers, £26,000, and its accommodation was for eighty patients. Since then, considerable structural extensions of the original building have been made, and additional land acquired, involving large outlay, which, however, as at its foundation, was met by proportionally liberal contributions, and loans given on easy terms. The entire cost of the buildings, land, etc., up to 1912 was £41,500. At the close of the year 1900 there were 60 patients resident; at the close of 1911 there were 104, the daily average during the year having been 117, and the highest number under treatment at one time, 130. These figures show an increasing appreciation, as well as the need there is of the services of the home; and during the year 1912 the rush of patients was so great that almost daily several applications for admission had to be refused or postponed. In the course of the year 848 patients were admitted, 645 were discharged cured or improved, and 204 unimproved. Only one died.

The patients treated were divided into four classes. The relative percentage numbers in each class in the years 1900 and 1911 respectively were as follows:

	1900	1911
(1) Peripheral nerve and muscle diseases, organic diseases of central nervous system, especially tabes dorsalis and hemiplegia . . . . .	12.90	11.10
(2) Neuroses, <i>e.g.</i> , neurasthenia, hysteria, chronic alcoholism, chorea, tic, etc. . . . .	62.10	75.80
(3) Mental disorders . . . . .	23.60	10.90
(4) Internal disease (heart affections, etc.) . . . . .	1.39	2.20

The management from the first intimated that the home—and the same is true of all the other similar institutions since erected—was not intended for mental cases, but, as might be expected, many doubtful and borderland cases applied for admission, and were accepted. But as time went on greater discrimination was exercised, and the above table is given to show how the proportion of such cases has diminished in the course of ten years. It also suggests that if there were institutions, apart from asylums, where cases of incipient insanity could be treated, of course without certification, they would probably be largely availed of.

The home concerns itself not merely with the medical treatment of patients. Recognising the hygienic and curative value of regulated employment for nervous patients, work of various kinds, notably gardening, is provided for all who are capable of employing themselves. And, after discharge, opportunities for work are continued on after-care principles, patients being kept on for months as helpers in some department of the home, until they are able to get work outside it. Ultimately a situation and employment bureau has been organised, in order to facilitate the regaining of a livelihood by those discharged. Moreover, a pension fund has also been started for the inmates. For all these collateral benefits money, of course, was needed, but the home has now become so widely appreciated that funds have never been wanting to carry out its beneficent objects, and large sums of money, grants of land, free bed foundations, etc., were freely bestowed, in many instances by anonymous donors. The "Haus Schönau" has,



in fact, been an unqualified success from first to last. Its arrangements approach as nearly as they can to perfection, and it is regarded in every sense as a model institution of its kind, so much so, that numerous authorities, boards of management, and societies which are concerned in like projects, are accustomed to apply there for information as regards the fitting-up and organisation of similar institutions in their own districts.

Consequent on the brilliant success of the Schönow House quite a number of sanatoria on the same lines have been erected and fully equipped in various parts of Germany. In Hanover, the Rasenmühle Home at Göttingen, in the Rhine Province the Roderbirken near Leichlingen, in Baden, and Jena. The Lührmann Institution in Essen is the first municipal sanatorium for nervous diseases. It is intended for the educated and industrial middle class, who cannot afford the cost of the more expensive private homes; persons of the working class are, as a rule, not eligible. A second municipal institution has lately been completed at Frankfort on the Main, in the Valley of the Taunus. One of the latest of these homes is Bergmannswohl, which is really a curative institution for nerve disorders the result of accident, built and owned by the Miners' Trades Union near Schkeuditz in Saxony. The arrangements here are thoroughly up to date, and on a most liberal scale, including chemical research laboratory, Röntgen-Ray room, psychophysiological instruments, every kind of therapeutic electric apparatus, baths of every description including electric, massage, etc. Lastly, must be mentioned the Rothschild Home in Vienna, for the founding of which the late Nathaniel, Baron von Rothschild bequeathed a capital sum of twenty million crowns (about £80,000), the interest on which was to be applied for the purpose. Germany has certainly led the way in the establishment of these much-needed institutions, and has done it in a manner which reflects the highest credit on her enlightenment and liberality. And, although the movement cannot be said to concern psychiatry directly, yet, there being no hard and fast line separating neuropathic from psychopathic disorders, it can scarcely be doubted that many patients suffering at first from non-mental functional neuroses, by getting the benefit of early treatment in such homes of the most advanced and scientific kind, would in this way escape the more serious calamity of psychical derangement occurring later on.

Dr. Bresler is to be congratulated on the amount of useful information which he has supplied in his pamphlet, the value of which is enhanced by a number of illustrations.

Since the above was issued, a much more imposing work has reached us through the kindness of Dr. Bresler. It is the fourth of a series of volumes which have appeared at intervals, in which institutions for the care of the insane in different nationalities are described, extending from our near neighbours Holland and Belgium to far distant countries like Brazil and Japan. This volume is edited by Dr. Bresler, who contributes a preface to it. It is sumptuously illustrated, and contains a vast amount of interesting details. The series, when completed, will form a valuable work of reference, presenting what Dr. Bresler in his

preface calls an "international picture" of the provisions for the care of the insane all the world over. The title of the work is *Heil- und Pflegeanstalten für Psychischkranke in Wort und Bild*, Bd. I.

T. DRAPES.

#### 4. Pathology of Insanity.

*The Neuroglia in Intoxications* [*La neuroglia nelle intossicazioni*]. (*Ann. di Neurol.*, anno xxxi, fasc. 4, 1913.) Pandolphi.

This paper records the results of an original investigation regarding the pathological changes produced in the neuroglia by experimental intoxication with carbonate of lead. The animals used in the research were young dogs, and the experiments were arranged so as to furnish groups of cases of acute, subacute, and chronic poisoning. The histological appearances are well shown in a series of micro-photographs of preparations of spinal and cerebral tissues stained by a variety of the more recent methods.

The conclusions arrived at by the author are as follows :

(1) The pathological fibrillary network is made up in part of the pre-existing reticulum modified in its histo-chemical constitution, and is in part of new formation. The network is of different chemical nature from the protoplasm in which it develops, the transformation being determined by the nuclear activity of the neuroglia cell under the influence of the toxic stimulus.

(2) With regard to the mutual relations of the nervous and the neuroglial elements from the pathological point of view, the author has clearly observed the presence of the latter in the interior of nerve-cells, the neuroglial elements being usually contained in vacuolated spaces, and being sometimes so numerous as entirely to displace the parenchyma of the cell. This penetration of neuroglia into nerve-cells is proportionate to the gravity of the morbid process.

(3) The neuroglial proliferation is intimately connected with the blood-vessels, protoplasmic processes extending from the vascular wall, as described by Golgi, into the surrounding area, and containing fine neuroglial fibres.

(4) The protoplasmic, fibrillary, and nuclear constituents of the neuroglia all present morbid alterations under the influence of intoxication, the changes observed being divisible into progressive, regressive, and progresso-regressive. The progressive alterations are more evident in early and acute intoxications.

(5) The granulo-fatty and red-cells (Stäbchenzellen) are of neuroglial origin.

(6) The amoeboid cells are to be regarded as degenerative forms of neuroglial cells.

(7) In the regressive alteration of the neuroglial tissue, the fibrillary element is more resistant than the protoplasm.

(8) In saturnine encephalitis the morbid changes are ordinarily distributed in foci in the depth of the grey substance, especially in the layer of large and intermediate pyramidal cells.

W. C. SULLIVAN.

## Part IV.—Notes and News.

### MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was, by the courtesy of the Visiting Committee, and at the invitation of Dr. T. Stewart Adair, held at Storthes Hall Asylum, Kirkburton, on Thursday, February 19th, 1914, under the Presidency of Dr. James Chambers.

There were present: Drs. T. Stewart Adair, David Bower, James Chambers, R. H. Cole, M. A. Collins, Harold R. Cross, Henry Devine, T. Graeme Dickson, J. Francis Dixon, T. Drapes, A. H. Firth, John W. Geddes, J. R. Gilmour, Ernest G. Grove, C. L. Hopkins, George R. Jeffrey, Walter S. Kay, John Keay, H. J. Mackenzie, H. D. MacPhail, G. Douglas McRae, Jas. Middlemass, J. E. Middlemiss, W. F. Nelis, Charles Planck, Bedford Pierce, J. I. Russell, R. C. Stewart, J. Grieg Soutar, R. Clive Walker.

Regrets of inability to be present were received from: Drs. Hayes Newington, J. Beveridge Spence, Wolseley-Lewis, T. Shaw Bolton.

Visitors: Drs. H. Cooper, H. S. Gettings, W. H. Robinson, C. Wilfred Vining.

Present at previous Council Meeting: The President, Dr. Jas. Chambers, in the Chair; Drs. Adair, Cole, Collins, Devine, Drapes, Keay, McRae, Nelis, Soutar.

Dr. Adair and his colleagues conducted parties over the institution during the morning.

The members were entertained at luncheon in the Recreation Hall, during which a selection of music was admirably rendered by the Asylum Orchestra. Dr. Adair was in the chair, and proposed "The King," which toast was duly honoured.

The PRESIDENT said that he was very reluctant to curtail that very agreeable feature of their proceedings, but they must soon adjourn to another room. He felt sure that the members would wish him to express their appreciation of the hospitable welcome which they had received and of the privilege of seeing Storthes Hall. All present were doubtless impressed by the beneficent and munificent provision which had been made for persons of unsound mind in that district, and, at the same time, they recollected the honourable record which Yorkshire had earned in having afforded support and encouragement to her scientific workers. He referred to the action the Association was taking in furtherance of scientific research, and he expressed the confident opinion that the present asylum medical officers in Yorkshire would maintain her position in the van of scientific progress. He gave the toast of a continued career of usefulness for Storthes Hall, and coupled with it the name of Dr. Adair, to whom and to the Visiting Committee he desired to express the members' warmest thanks for their hospitality.

Dr. ADAIR, in responding to the toast, which had been cordially received, stated that he would convey the thanks of the Association to the Visiting Committee.

#### MEETING.

The minutes of the last quarterly meeting, having been printed and circulated in the Journal, were taken as read, and were duly confirmed.

The PRESIDENT said that since the last meeting one of the senior members of the Association had passed away. He referred to Dr. Alexander Newington. Those of them who knew their late member intimately mourned the loss of a very true friend, and the Association had been deprived of a loyal supporter. He was an able and accomplished physician who devoted himself whole-heartedly to the patients under his care. The President suggested that a message of condolence be sent to his widow; and a similar message to their Honorary Treasurer also, to whom the severance of a life-long association must mean so much.

The Members rose in their places to signify their acquiescence in this proposal.

The PRESIDENT announced that at the meetings both of the Parliamentary Committee and of the Council a communication sent by the Medico-Legal Society to the Association was considered. That Society had appointed a committee to

report on the treatment of incipient insanity with a view to fresh legislation. He understood that an invitation, similar to the one that they had received, had been sent to the British Medical Association. At the Council meeting of their own body it was agreed to join this Committee, and the President, the ex-President, the Treasurer, the Secretary, the Chairman of the Parliamentary Committee, and the Chairman of the Status Committee were nominated as representatives, with power to add to their number from among the members of the Association.

The following candidates for election as ordinary Members of the Association were ballotted for and duly elected:

Bennett, James Wodderspoon, M.R.C.S., L.R.C.P., Junior Assistant Medical Officer, County Mental Hospital, Stafford.

Ewing, Cecil Wilmot, L.R.C.P.I. & L.M., L.R.C.S.I. & L.M. (Honours), Second Assistant Medical Officer, Chartham Asylum, near Canterbury.

Gettings, Harold Salter, L.R.C.P., L.R.C.S., L.F.P.S.G., D.P.H., Pathologist, West Riding Asylum, Wakefield.

James, George William Blomfield, M.B., B.S.Lond., Resident Medical Officer, Moorcroft, Hillingdon, Uxbridge.

#### COMMUNICATIONS.

"The Clinical Significance of Katatonic Symptoms." By Henry Devine, M.D., M.R.C.P. (see p. 278).

#### BACTERIOLOGICAL INVESTIGATIONS ON ASYLUM DYSENTERY.

Dr. H. S. GETTINGS made a brief communication on this subject. He said that he had been working on dysentery at Wakefield Asylum for some twelve months, and gradually the results were beginning to be tabulated. Although the results were not complete, he thought that perhaps he might make a preliminary communication at that meeting, and follow it up later with a more elaborate paper. More or less his remarks would be in the nature of statistics. During the past year there had been something like one hundred cases of dysentery at the asylum, and he received samples of the stools in eighty-two. The others were mild cases, or else he was away on holiday at the time, and samples were not examined. Forty-four out of the eighty-two samples contained non-lactose-fermenting bacilli, and of these, thirty-nine were shown to have colonies of the *Bacillus dysenteriae* present. Thus the bacillus was only obtained in about half the patients examined. This raised an interesting question. Some of the cases, of course, might not have been true dysentery; acute diarrhoea and conditions of that kind might have come in, but it was certain that some of the cases died very shortly afterwards from acute dysentery. Was it due possibly to failures in technique, to special difficulties in obtaining the bacilli, or was there any other cause of dysentery than the organisms of which they were aware? The work had not been finished, but personally he thought there was no doubt that the dysentery bacillus was the definite cause in all the dysenteric cases, and it was probably because it was not always present in the stools that in half the cases he had been unable to obtain it. He had found that on examining the stools, in some cases of acute dysentery, that he had failed to find the bacillus on the first day, had obtained it on the second day, and had failed again on the third. The probability was, he thought, that his failures were due to the fact that he was only able to have the stools at a time when the dysentery bacillus was not present. Many of the cases were of quite a mild type, with the result that it was not possible to get a second satisfactory motion.

On the culture plates, in the case of each sample, he tried to pick off ten of the non-lactose-fermenting colonies so as to make sure of getting the materials for making a thorough investigation of the infecting organisms. Out of the whole of the colonies taken, 83 per cent. were dysentery bacilli. Up to that morning the figure had been 93 per cent., but the most recent cases had shown a larger proportion of other non-lactose-fermenting bacilli. The investigation showed that in Wakefield Asylum non-lactose-fermenting bacilli were uncommon in other than dysenteric cases.

I.X.

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It was necessary to work on the subject further. The question of the absolute relationships of all the organisms he had obtained had to be followed up. Were they all of one tribe, or did they vary? He hoped that in the course of a short time this work would be completed, and he would be able to present a more extended statement at the meeting of the Association.

"Doubtful Cases of General Paralysis of the Insane," by Dr. W. H. ROBINSON (see p. 291).

The PRESIDENT, in closing the proceedings of the afternoon, said that they owed a debt of gratitude to the Medical Officers of Wakefield Asylum, and he expressed the thanks of the Association for the interesting communications to which they had listened.

In the evening the members dined together at the George Hotel, Huddersfield.

#### THE LIBRARY OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE Library is open daily for reading, and for the purpose of borrowing books. Books may also be borrowed by post, provided that at the time of application threepence in stamps is forwarded to defray the cost of postage. Arrangements have been made with Messrs. Lewis to enable the Association to obtain books from the lending library belonging to that firm should any desired book not be in the Association's Library.

The following books have recently been added to the Library:

White.—*Outlines of Psychiatry.*

Brill.—*Psychoanalysis: Its Theory and Practical Application.*

Cole.—*Mental Diseases.*

Meyer, Hoch & Jelliffe.—*Dementia Præcox.*

Freud.—*Three Contributions to Sexual Theory.*

The following journals are now circulated among members of the Association.

*Journal of Abnormal Psychology.*

*Journal of Nervous and Mental Diseases.*

*American Journal of Insanity.*

*Journal de Psychologie Normale et Pathologique.*

*Zeitschrift für die gesamte Neurologie und Psychiatrie.*

*Psychoanalytic Review.*

*Review of Neurology and Psychiatry.*

Application for books should be addressed to the Resident Librarian, Medico-Psychological Association, 11, Chandos Street, Cavendish Square, W. Other communications should be addressed to Dr. Edward Mapother, at Long Grove Asylum, Epsom.

#### LONDON COUNTY COUNCIL (MARCH 3RD AND 10TH, 1914).

##### MENTAL DEFICIENCY ACT, 1913.

##### *Abstract of Reports of the General Purposes Committee.*

1.—We have considered matters arising under the Mental Deficiency Act, 1913, requiring determination before the appointment of committees on March 17th, 1914, when the Committee to be constituted under the Act will be appointed.

It is desirable to recite the position of the Council with regard to the administration of the Act. By section 28 the Council is required to constitute a Committee for the purposes of the Act, consisting of such members of the Council, appointed by the Council, as the Council may determine, and of such persons, not being members of the Council, but being poor-law guardians or other persons having special knowledge and experience with respect to the care, control, and treatment of defectives, appointed by the Council, as the Council may determine, and of the persons so appointed some shall be women, and of the whole committee the majority shall be members of the Council. Where, however, a local authority has appointed one or more visiting committees or asylums committees under the Lunacy Acts, 1890 to 1911, the Council may determine that—

(a) The members of such committee or committees shall, with the addition of at least two women, act also as the committee for the care of the mentally defective; or—

(b) The members of such committee or committees shall be the members of the Council appointed for the care of the mentally defective.

By section 66 of the Mental Deficiency Act, 1913, the Secretary of State may by order authorise the council of a county or county borough acting as a local authority under the Lunacy Acts, 1890 to 1911, to appoint the committee for the care of the mentally defective, constituted under this Act, to be the visiting committee or asylums committee for the purposes of those Acts, and by order dated January 15th, 1914, the Secretary of State has authorised the Council to appoint the committee constituted under the Mental Deficiency Act to be the Asylums Committee for the purposes of the Lunacy Acts, 1890 to 1911.

On November 11th, 1913 (p. 940), the Council resolved that legislation should be sought to place the Committee to be appointed for the administration of the Mental Deficiency Act, and to be the Visiting Committee for the purposes of the Lunacy Acts, "under the full directions of the Council both as to the powers and duties to be exercised by them and as to their term of office." On December 9th, 1913 (pp. 1346-52) the London County Council (General Powers) Bill, 1914, Part VII of which was framed to give effect to this decision, was submitted to the Council, and the Council on that date agreed that the provisions of section 28 (2) of the Mental Deficiency Act, 1913, which requires that "all matters relating to the exercise by the local authority of their powers under the Act (except the power of raising a rate or borrowing money) shall stand referred to the Committee for the Care of the Mentally Defective, and that the local authority before exercising any such powers shall, unless in their opinion the matter is urgent, receive and consider the report of the Committee with respect to the matter in question," should not be repealed. The clauses inserted in the General Powers Bill were accordingly amended, and the effect, therefore, of the clauses in the Bill, if they become law, will be to place the Committee for the administration of the Mental Deficiency Act and the Lunacy Acts in the same relation to the Council as is the Education Committee.

In the meantime, however, pending the grant by Parliament of this authority, the position will be that the Committee will, so far as their functions under the Mental Deficiency Act are concerned, have relations with the Council on lines practically identical with those in the case of the Education Committee, while as regards the administration of the Lunacy Acts the Committee will be in the position of greater independence at present attaching to the Asylums Committee. In this report we deal with the present position as indicated above, considering it advisable to defer dealing with the conditions which will obtain if and when the authority sought from Parliament shall have been obtained. The Board of Control, which will under the Mental Deficiency Act exercise supervisory functions in regard to the work both under the Mental Deficiency Act and the Lunacy Acts, have as yet issued no regulations.

#### *Direction of the Service.*

We have given special attention to the question of the arrangements to be made for the direction of the service. This question consists of two parts: first, what officer should be entrusted with the professional or executive duties involved, and, secondly, what arrangements should be made for the purely administrative or clerical functions.

#### *Professional or Executive Officer.*

One of the chief reasons for the setting up of one committee under the Mental Deficiency Act and the Lunacy Acts was the necessity for securing co-ordination of the systems of treatment of all persons suffering from mental defect, and the Council may, when the proper time arrives, consider a proposal that the general supervision of the arrangements for the treatment of persons under the two series of Acts should be in the hands of one officer. At the present time there is no one person occupying the position of a chief professional or executive officer in the asylums' service. There is a clerk or administrative officer, and each asylum is

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superintended by its own professional or executive head. For the interim period—with which we are dealing—it would obviously be impracticable to deal with the whole organisation of the asylums' service, the result of which might be to involve a material change in the existing arrangements. Moreover, the operation of the Mental Deficiency Act will doubtless necessitate the consideration of this question by the Committee for the Care of the Mentally Defective. We therefore confine our proposals to suggesting temporary arrangements for the interim period which must be provided for.

Our proposal is that the professional and executive work, so far as it has reference to the Mental Deficiency Act, should be controlled by the medical officer of health, and that the professional or executive methods of the Asylums Committee should be retained as at present during the period in question.

It is to be noted that it will devolve upon the Education Committee to make arrangements, subject to the approval of the Board of Education, for ascertaining what children over the age of seven and under the age of sixteen within the county are defective children within the meaning of the Act, for ascertaining which of such children are incapable by reason of mental defect of receiving benefit or further benefit from instruction in special schools or classes, and for notifying to the Committee for the Care of the Mentally Defective the names and addresses of defective children over the age of seven who have been ascertained to be incapable, by reason of mental defect, of receiving benefit or further benefit in a special school or class under the Elementary Education (Defective and Epileptic Children) Act, 1899, without detriment to the interests of the other children, or as respects whom the Board of Education certify that there are special circumstances which render it desirable that the children should be dealt with under the Act by way of supervision or guardianship, or who, on or before attaining the age of sixteen, are about to be withdrawn or discharged from a special school or class, under the Act of 1899, and in whose case the Education Committee are of opinion that it would be to the child's benefit to be sent to an institution or placed under guardianship.

The officer upon whom it will devolve, in the great majority of cases, to select children for notification to the Committee for the Care of the Mentally Defective is the medical officer of health in his capacity of school medical officer. There is no doubt that a large proportion of the persons to be dealt with under the Mental Deficiency Act will be ascertained by notification from the schools. Provisions of the Act appear to require a continuous medical action from the stage of passage of children from the elementary through the special school or otherwise to that of certification for subsequent institutional treatment or guardianship.

It is for these reasons that we recommend the medical officer of health should for the interim period be the professional or executive officer responsible for the direction of the medical side of the mental deficiency service. His duties are defined in recommendation (e).

#### *Administrative or Clerical Officer.*

The Council having obtained authority under order of the Home Secretary to constitute the Committee an asylums or visiting committee under the Lunacy Acts, it is clear that until the Council obtains the powers in regard to the Asylums Committee now being sought by means of its General Powers Bill, 1914, it would be convenient for the clerk of the Asylums Committee to act as clerk of the whole committee. His duties under the Lunacy Acts would remain unaltered, and in addition his duties would be as defined in recommendation (g). The clerk of the Asylums Committee is appointed by the Committee, and is not an officer of the Council, and it will be necessary, therefore, that he should be appointed by the Council in the capacity for the time being of clerk to the Committee for the Care of the Mentally Defective, with an appropriate arrangement as to the payment of salary in respect of his duties under the Lunacy Acts and otherwise.

Since the ultimate intention of the Council is to place the Committee for the Care of the Mentally Defective in the same relations to the Council as the Education Committee it follows that the same means to secure this end should be adopted in each case. The education officer is clerk of the Education Committee, and the duties of the clerk of the Council in relation to that committee are defined by standing order whereby he has access to the Education Committee and to all sub-committees of that committee, and attends regularly, either personally or by

deputy, the Education Committee for the purpose of acquainting himself with matters and proceedings necessary for the efficient performance of his duties to the Council, and advising the chairman of the committee and the chairmen of sub-committees as to standing orders and procedure, or as to any matters affecting the general conduct of the business of the committee in their relation to the Council. He is also responsible for seeing that the reports of the committee to the Council are submitted clearly, fully and in proper form, and that they contain all matters which should be reported for consideration by the Council. We submit herewith the new standing orders and amendments of existing standing orders necessary to adapt this procedure to the circumstances of the work of the Committee for the Care of the Mentally Defective.

*Recommendations.*

(a) That the Committee appointed to administer the Mental Deficiency Act and the Lunacy Acts be designated the "Committee for the Care of the Mentally Defective."

(b) That the constitution of the Asylums and Mental Deficiency Committee be thirty-four members, of whom not fewer than four shall be women, and ten of whom, including not fewer than two women, not being members of the Council and being Poor Law Guardians or other persons having special knowledge and experience with respect to the care, control and treatment of defectives, shall be appointed by the Council; and that the quorum of the Committee be one-fifth of its members (excluding *ex-officio* members).

(c) That the reference to the Committee for the Care of the Mentally Defective be as follows:

*(Abstract.)*

PART I.—MENTAL DEFICIENCY ACT, 1913.

1. The general principles governing the administration by the Council of the provisions of the Mental Deficiency Act, 1913 (referred to in Part I of this order of reference as the Act), shall be determined by the Council. All matters involving new principles of administration, and all questions relating to the provision of new institutions or approved homes, the extension or enlargement of existing institutions or approved homes, shall be reported to the Council for its decision. The provisions of this part of this order of reference shall be subject to these limitations, and to the limitation that any proposal to exercise any powers beyond the obligations imposed by the Act shall be reported to the Council for its decision.

2. The Committee shall (i) ascertain what persons, other than those notifiable under the Act, ought to be dealt with by the Council under the Act; (ii) take steps to provide suitable supervision for persons, so ascertained or notified, and, if such supervision affords insufficient protection, to secure for them institutional treatment or guardianship; (iii) exercise the powers of the Council in all matters of ordinary current administration arising under the Act.

3. (a) The Committee shall, subject to the provisions of standing order No. 291, make all recommendations to the Council for and in relation to the appointment, promotion, discharge, and dismissal of officers appointed for technical or professional work in connection with the administration of the Act.

(b) The Committee shall have the appointment, promotion, discharge and dismissal of all persons, other than those referred to in Clause (a) of this paragraph, exclusively employed at institutions or homes provided by the Council under the Act. The number, conditions of service and rates of pay of such persons shall be determined by the Council.

(c) Matters relating to the appointment, promotion, discharge, dismissal, and superannuation of all other officers appointed in connection with the administration of the Act shall be reported on to the Council by the Establishment Committee. The Council shall, unless in its opinion the matter is urgent, before exercising its powers with reference to any such matter so reported to it by the Establishment Committee, receive and consider the report of the Committee for the Care of the Mentally Defective with respect



to the matter in question, but the Committee for the Care of the Mentally Defective shall not make any report to the Council with respect to any such matter except concurrently with the Establishment Committee.

(d) The Committee shall consider and report to the Council upon all questions relating to the superannuation of all officers of certified institutions provided by the Council under the Act.

4. The Committee shall have the maintenance and management of all land and buildings owned or provided by the Council for the purposes of the Act and appropriated by the Council for such purposes, together with the equipment, furniture, apparatus, fixtures and fittings belonging to or held by the Council for such purposes.

5. The Committee shall determine the kind of stores, furniture and equipment to be used, and shall order either from the Council's stores, or under contracts or arrangements made for the purposes of the Lunacy Acts, all stores, furniture and equipment required for current use in connection with the administration of the Act.

6. The Committee shall have the direction of (i) all works or contracts to be done or entered into under the Act, and (ii) all contracts for the maintenance of patients under the Act.

7. The Committee shall, in addition to reports on matters which are not delegated to them, report to the Council in such a manner and at such times as will give to the Council continuous information as to the proceedings of the Committee in matters of ordinary current administration delegated to them.

8. The Committee, in acting for the Council under this part of this order of reference, shall on all occasions use and act in the name of the Council.

9. The standing orders of the Council shall apply to the Committee except as otherwise or herein expressly provided.

#### PART II.—LUNACY ACTS.

1. The Committee shall be the committee for the management and control of all the county lunatic asylums, within the meaning of the Acts relating to such asylums.

2. The Committee shall when acting under Part II of this order of reference be subject to the general rules and regulations which apply to other standing committees except that the provisions as to estimates and financial procedure shall be subject to the special rules as to asylum finance set out in Part II of this order of reference.

3. It shall be the duty of the Committee to consider from time to time whenever necessary the question of providing additional accommodation for pauper lunatics, and to report thereon to the Council.

4. The Committee may exercise the powers given by the Lunacy Act, 1890.

(d) That the following recommendation (e) be deemed to be a matter of urgency within the meaning of Section 28 (2) of the Mental Deficiency Act, 1913.

(e) That during the interim period from 17th March, 1914, until the powers sought by the Council under Part VII of the General Powers Bill, 1914, take effect, the medical officer of health be responsible for the general supervision of the arrangements for dealing with persons included within Part I of the reference to the Committee for the Care of the Mentally Defective dealing with mental deficiency, and that the following be added to standing order No. 378 dealing with the duties of the medical officer of health:

(vii) To advise the Committee for the Care of the Mentally Defective as to the action to be taken in regard to persons notified to the Committee, or otherwise to be dealt with under the Mental Deficiency Act, 1913, and to supervise generally the arrangements to be made for dealing medically with such persons under the Act.

(f) That during the interim period from 17th March, 1914, until the powers sought by the Council under Part VII of the General Powers Bill, 1914, take effect, the officer appointed by the Committee for the Care of the Mentally Defective as their clerk under the Lunacy Acts be also appointed by the Council as clerk of the Committee in respect of their duties under the Mental Deficiency Act, 1913.

## FAMILY AND PERSONAL HISTORIES OF PATIENTS.

With the help of a grant from the Carnegie Trust, the Royal Edinburgh Mental Hospital is paying for the working expenses of a physician whose sole duty it is to visit the homes of the parochial patients sent to the Institution. Thus, for the first time in Scotland, a detailed investigation by the personal inspection and inquiries of a medical man is being made into the possible hereditary and environmental causes of the insanity of the cases admitted. "Such an investigation," writes Dr. G. M. Robertson, "while extending and making for the accuracy of our information, cannot fail to throw light on the causation of insanity in general, and of acquired insanity in particular, and in the event of our patients being discharged may be the means of suggesting such measures as will prevent many from relapsing into insanity again."—*The Medical Officer*, March 14th, 1914.

[A like proposition has been urged for some years in the London County Asylums.—ED.]

## THE AFTER-CARE ASSOCIATION.

THE Annual Meeting of the After-Care Association for poor persons discharged recovered from asylums for the insane was held on February 23rd, at the Royal College of Physicians, Pall Mall East, Sir THOMAS BARLOW, Bart., K.C.V.O., M.D., presiding.

The report of the Council, and balance-sheet for the year ending 1913, were read by the SECRETARY (Mr. H. THORNHILL ROXBY), who emphasised the fact that additional subscribers and donors are much needed, and that it was only owing to the increased legacies that the income in 1913 had not declined.

The following is an abstract:

One of the most important events of the Association's year has been the consideration by the Council of extending the work so as to receive cases discharged on trial, as suggested in the paper read at the annual meeting on February 13th, 1913, by Dr. Hubert Bond, Commissioner in Lunacy. A special committee was appointed, consisting of Dr. Rayner, Sir George Savage, Dr. Hubert Bond, Dr. Percy Smith, Dr. Lord, Dr. Stoddart, Dr. Worth, Dr. Bower, and Mrs. Marriott Cooke, to consider if the extension were possible.

After a most careful consideration of detail they drew up a report recommending to the Council that the suggestion be tried from November 1st in connection with certain asylums in the South of England. Since then several applications have been received on behalf of such cases, and at present the results have been satisfactory. This has, however, thrown considerably more work on the Council and officers of the Association, and has necessitated a meeting of the Council every fortnight, with a rota of chairmen for the increased number of meetings. It is hoped, if the plan succeeds, to extend the offer of similar help to various other asylums during 1914. It is also proposed to hold a special meeting of subscribers at an early date to alter the title and the constitution, so that the Association may be able to conform permanently to the altered conditions of the work.

**Finance.**—The total amounts received in 1913 and 1912 were made up as follows:

1913.	£	s.	d.	1912.	£	s.	d.
Subscriptions and donations, including amounts collected at meetings ... ..	838	6	8	Subscriptions and donations, including amounts collected at meetings ... ..	974	1	3
Donations for special cases ... ..	59	0	8	Guild of Help (including Café Chantant) ... ..	192	18	4
Guild of Help ... ..	42	2	0	Legacies ... ..	550	11	7
Legacies ... ..	1,166	13	4	Dividends on investments, and interests on deposits ... ..	129	19	0
Dividends on investments, and interests on deposits ... ..	159	0	7	Donation from Queen Adelaide's Fund, Commissioners in Lunacy's Fund, repayments for outfit and maintenance, and contributions from friends ...	133	12	11
Donation from Queen Adelaide's Fund, Commissioners in Lunacy's Fund, repayments for outfit and maintenance, and contributions from friends ...	141	15	4	Returned income tax on interest on investments (3 years) ...	17	9	2
Affiliation Fee from Birmingham Branch ... ..	3	3	0				
	<u>£2,410</u>	<u>1</u>	<u>7</u>		<u>£1,998</u>	<u>12</u>	<u>3</u>

Although the total receipts have increased owing to legacies, it will be seen that the actual income from subscriptions and donations has slightly decreased, and that fresh contributors are therefore urgently needed.

*Legacies.*—During the year the Association has received a further instalment from the solicitors of the estate of the late Miss E. W. Walker, amounting to £166 13s. 4d., and the sum of £1,000 under the will of the late Mr. A. H. Harman. Owing to the uncertainty of the money market during the greater part of 1913, and the great fluctuations which took place in all Trustee stocks, together with the high Bank rate which prevailed during the year, the Council thought it better in the interests of the Association to place these amounts on deposit with their bankers (The Union of London and Smiths Bank, Victoria Street, Westminster), at the current rates of interest.

*Cases.*—During the past year applications on behalf of 377 persons were received, of whom 11 were on trial. Of these, 228 were women, and 149 were men. Of this number, 106 were cases from the London County asylums, 197 from other county and borough asylums, 18 from mental hospitals and licensed houses, and 56 from other institutions or private sources. Of these, 119 had been assisted in various ways during previous years, and 258 were before the Council for the first time.

One of the most important functions of the Association is finding suitable occupation for persons who, although recovered, would probably have great difficulty in re-starting themselves in life. The bestowal of a large amount of personal care and individual attention upon each case is necessitated, and the careful investigation of the suitability of those with whom they are placed. The result of this part of the work is far greater than the mere supplying of temporary homes, clothing, or grants for maintenance and tools, important though these may be. The strongest possible evidence of the utility of this Charity is shown not only in the comfort and aid given, but in the prevention of relapse, many who have had previous attacks remaining well since they have been under the influence of the staff of the Association.

Since the work of the Association commenced, with the appointment of the present secretary, 5,171 cases have been considered by the Council; of these a very large number from time to time, although suitably re-started in various spheres of work, require counsel in many ways, and call at the office to see some member of the staff. Advice is freely given, and frequently enables them to overcome satisfactorily any possible difficulties, and tends to prevent mental strain, which is particularly undesirable in the cases with which the Association deals.

*Guild of Help.*—This Guild has once more rendered valuable assistance during 1913. In addition to many useful presents of clothing, etc., for which the Council is most grateful, the total amount contributed in subscriptions and donations was £42 2s.

A report with balance-sheet of this Guild is published separately, and all further information may be obtained from the Hon. Secretary, Mrs. Ironside Bruce, 10, Chandos Street, W.

The following account has been received from the Birmingham Affiliated Branch.—President: The Lord Mayor of Birmingham. This Branch was formed at the beginning of the year, and during that time all patients discharged from the Mental Hospital have been visited by members of the Case Sub-Committee and others. Forty-three patients have been assisted—twenty-four women and nineteen men. The assistance has been given in various ways, such as finding work, arranging holidays, paying arrears of rent, giving grocery or milk orders, hospital notes or clothing, etc. The Committee endeavours by home visits to keep in continuous touch with all friendless and poor discharged patients, who, besides receiving material help, have often much benefited by advice, sympathy, and encouragement. Among the female alcoholic patients this work has been particularly successful, as these on their discharge are reported to the British Women's Temperance Association, whose members visit regularly, and have obtained most encouraging results, several patients having been induced to sign the pledge.

The Committee is now starting in connection with the Brabazon Work Society to teach the inmates of the Mental Hospital various kinds of needlework, with the idea of interesting and brightening their lives. Though this cannot exactly be called "After Care," it is intimately connected with the work, as, by means of the lessons, the helpers have an excellent opportunity of getting to know the patients about to be discharged.

The balance-sheet of this branch is published separately, and is not included in the accounts of the Association. This, together with the report of the City of Birmingham Branch, can be had on application to Miss Wightwick, 318, Summer Lane, Birmingham.

Sir THOMAS BARLOW then gave an address (see p. 295).

Sir GEORGE SAVAGE moved the adoption of the report and balance-sheet. He said that there had been slow but steady uniform growth in the work, and urged the importance of obtaining more money.

Dr. TAYLOR (Medical Superintendent, East Sussex Asylum, Hellingly), in seconding the adoption of the report, said that the decision of this Association to take cases on trial was of very great assistance to the Asylums, the question having always been a most difficult one to deal with. He exemplified one or two cases from the East Sussex Asylum, in which the Association had been of the greatest help.

Mr. A. H. TREVOR (Commissioner in Lunacy), in supporting the motion, said that in reading the report the two most satisfactory points that appealed to him were that Birmingham had started an affiliated society, and that the Association had extended their sphere of usefulness to taking cases on trial.

The Rev. H. STEPHENS (Chaplain, Essex County Asylum, Brentwood), and Mr. H. L. WOOLCOMBE supported the adoption.

The re-election of President, Vice-Presidents, and Council was proposed by Dr. STANSFIELD (Medical Superintendent, London County Asylum, Bexley), and was seconded by Dr. SIDNEY COUPLAND (Commissioner in Lunacy).

A vote of thanks to the Chairman was proposed by Dr. HENRY RAYNER, who said that Sir Thomas Barlow's kindness in presiding on that occasion would, he felt sure, go very far towards increasing the funds of the Association. Dr. R. PERCY SMITH seconded the vote.

Sir THOMAS BARLOW replied, and the excellently attended meeting ended.

## THE ROYAL SOCIETY OF MEDICINE.

### SECTION OF PSYCHIATRY.

SIR GEORGE H. SAVAGE, President, in the Chair.

At a meeting held on Tuesday, October 28th, 1913, at 1, Wimpole Street, W., Dr. C. A. MERCIER read a paper on "The Concept of Insanity."

The synopsis of the points for discussion was as follows:

Insanity and unsoundness of mind are not the same thing. Each includes much that is not in the other.

Insanity is disorder of conduct and of mind, and consists of certain disorders only of conduct and of mind. This is the simplest concept of insanity.

But disorder of brain function may be added to the concept, which is then three-fold, and disorder of metabolism may be added, making a fourfold concept. There are, therefore, three different concepts included under the name insanity; which is right?

Each is right in its own connection, but confusion results from calling different concepts by the same name.

If insanity means disorder of conduct and mind alone, then insanity is a symptom of disorder of brain function.

If insanity means disorder of conduct and mind plus disorder of brain function, and if these three disorders are all correlated disorders that the patient suffers from, then these three disorders constitute the disease of insanity.

If, however, these three disorders are correlated with some wider disorder, such as alcoholic poisoning, myxœdema, gout, specific fever, Graves' disease, etc., then the three-fold disorder is not a disease, but is a sub-disease of the wider disease.

When insanity is a symptom only, it is expedient to call it delirium, and to reserve the name insanity for the cases in which what is meant by it is a disease.

The paper was discussed by Sir GEORGE SAVAGE and Drs. PERCY SMITH and ERNEST JONES.



An interesting and instructive case of "Pellagra with Insanity" was reported by Dr. J. M. E. COLE.

A Clinical meeting of the Section was held at Bethlem Royal Hospital on December 9th, 1913. Dr. STODDART showed: (1) Case of Korsakoff's Disease, with Systematised Anæsthesia. (2) Case of Arteriopathic Dementia, exhibiting Apraxia. (3) Case of Hypopituitarism. (4) Case of (?) Anxiety Hysteria. (5 and 6) Cases of Dementia Paranoides. (7) Case of Acute Confusional Insanity; Synaptic Resistance reduced by a Hypodermic of Strychnine.

Dr. RALPH BROWN showed: (1) Case of (?) General Paralysis of the Insane. (2) Case for Diagnosis; (?) Dementia Præcox.

### OBITUARY.

#### ALEXANDER S. L. NEWINGTON.

It is with profound regret that we record the death of Dr. Alexander Newington, which occurred, as the result of a motor accident, on January 17th last.

Dr. Newington was born in 1846; he was a son of Dr. Samuel Newington, and a grandson of the founder of Ticehurst House. He was one of the senior members of the Medico-Psychological Association, in whose proceedings and welfare he took a keen interest. The greater part of his professional life was spent at Ticehurst, and those who know of the success which attended his devoted efforts to help the patients under his care there are reminded of Charles Kingsley's words: "The men whom I have seen succeed best in life have always been cheerful and hopeful men, who went about their business with a smile on their faces, and took the changes and chances of this mortal life like men, facing rough and smooth as it came, and so found the truth of the old proverb, 'Good times and bad times and all times pass over.'"

We cannot better convey to our readers how the late Dr. Alexander Newington was esteemed by his intimate friends than by quoting the following tribute by Sir Bryan Donkin, which has already appeared in the *British Medical Journal*, January 31st, 1914.

"Having been an intimate friend of the late Alexander Newington in his early medical days, I venture to ask you to insert this short tribute to his memory. With the exception of his relatives and all others with whom he worked so long and so ably at the asylum at Ticehurst, of which he was joint proprietor with his cousin, Dr. H. H. Newington, from 1881 until his death, there are, perhaps, too few who know what an exceptionally able and attractive man he was. After returning in the early seventies from India, where he was interested for some years in tea-planting, he went to Cambridge, and in a surprisingly short time took the degree of M.B. It was at St. Thomas's Hospital, where he worked during the latter part of his student time, that I first met and came to know him well. His interest and zeal in clinical work were unbounded, and he was soon recognised by both teachers and students as one of the best observers, and most acute reasoners amongst his fellows. He was, I think, the ablest medical student I have known. After qualifying as M.R.C.S. and taking his Cambridge medical degree, he held consecutively the appointments of house-physician of St. Thomas's, and physician's assistant at Bethlem Hospital, and soon after settled in practice at Wheatley, near Oxford. His medical knowledge at this time was singularly great and sound, especially for one who had passed so short a time in acquiring it, and those who knew him at this period of his career could not fail to recognise that he had all the stuff in him to make a first-rate physician and clinical teacher. He was much liked and highly appreciated at Wheatley, and during the few years of his stay there greatly increased the practice. He had at this time married the daughter of Dr. Robert Barnes, the obstetric physician to St. Thomas's Hospital. I have pleasant memories of occasional visits I made to Dr. and Mrs. Newington at Wheatley, and of much interesting talk.

"Dr. Newington's all-round medical and surgical knowledge were highly appreciated by all at Ticehurst when he joined that establishment in 1881. His delight in the science and practice of his profession was never relaxed. Until the end he was, as his cousin tells me, a sound and true physician and surgeon, an

excellent observer, and shrewd diagnostician. Besides these medical qualities, he preserved also, from youth to age, his well-deserved popularity, and his interest in all kinds of outdoor pursuits. He will be greatly missed and deeply mourned, not only by all near and dear to him at Ticehurst, but also by all those who have ever known him well."

THOMAS O'CONOR DONELAN, L.R.C.P. & S.I.

Dr. T. O'Connor Donelan qualified in Dublin in 1898. After holding the appointment of House-Surgeon at the Mater Miser. Hospital, he took up asylum work at the West Riding Asylum, Menston. In 1905 he was appointed Senior Assistant Medical Officer at the Middlesex County Asylum, Napsbury, which post he held up to the time of his decease. Dr. Donelan was exceedingly energetic in everything appertaining to the welfare of his patients, and was earnest and untiring in his efforts in this direction. By his kindly disposition and persistent optimism he created for himself a great popularity with all with whom he came in contact. His death caused genuine regret and sorrow to a wide circle of friends, and much sympathy is felt for his brother, Dr. J. O'Connor Donelan, of Richmond Asylum, and other relatives in their bereavement. He died on February 22nd, 1914, from pneumonia, after a short illness. A memorial service was held at Napsbury Asylum on March 1st by the Rev. J. E. Thomas, B.D.

NOTICES BY THE REGISTRAR.

*Certificate in Psychological Medicine.*—The next examination for this Certificate will be held during the first week in July, 1914.

*Nursing Certificate.*—The next examinations will be held as follows:

Preliminary . . . . . May 4th, 1914.  
Final . . . . . May 11th, 1914.

EXAMINATION FOR THE CERTIFICATE IN PSYCHOLOGICAL MEDICINE—JULY 1st, 1913.

1. Enumerate the forms of insanity in which depression may be a prominent feature. Briefly discuss the differential diagnosis of these.
2. Under what circumstances would you consider it—(a) advisable, (b) permissible, (c) illegal, for a certifiably insane patient to be discharged to the "care of friends"?
3. How would you distinguish between four typical cases of (1) idiocy, (2) imbecility, (3) feeble-mindedness, (4) backwardness?
4. What do you understand by the term stupor? State briefly its causation, varieties and differential diagnosis.
5. Describe the conditions of post-epileptic automatism; and enumerate the varieties of epileptic equivalents commonly seen in the insane sufferer from epilepsy.
6. Give the general lines of treatment you would follow in a case of morphinism, particularly in regard to complications likely to occur.

EXAMINATION FOR THE NURSING CERTIFICATE, NOVEMBER, 1913.

(a) *Preliminary.*

1. Give two examples of each of the following: (a) A long bone; (b) a short bone; (c) a flat bone. What other bones articulate with each of those named?
2. What are the cavities of the human body, and what organs does each contain?
3. Mention the different constituents of the blood and their functions. Describe the formation of a blood-clot.
4. Name the principal arteries in the upper and lower limbs and indicate the position of each.
5. What are the chief sources of bodily heat? Explain the means by which the temperature of the body is kept constant in health.

6. What is meant by the absorption and assimilation of food? Where does each of these processes actually take place?

7. What measures would you take for the restoration of a person apparently drowned?

8. What are the symptoms of poisoning by opium? What treatment would you carry out in such a case?

(b) *Final.*

1. Describe fully the structure and functions of the skin.

2. What principles are involved in the ventilation of rooms? How would you utilise these principles in daily nursing practice?

3. What do you know about massage?

4. State the symptoms, and indicate the general management, of a case of chronic Bright's disease.

5. Describe one of the commoner forms of parasitic skin disease, stating what nursing precautions you would observe in its treatment.

6. What are the usual causes, and their significance, of alterations in the size of a patient's pupils?

7. Describe the main features of any case of premature dementia (*dementia præcox*) which you may have observed.

8. State briefly how you would care for and manage an epileptic patient in his own home.

*List of Successful Candidates.*

PRELIMINARY, NOVEMBER, 1913.

*Fort Beaufort, South Africa.*—Robert Laidlaw.

*Grahamstown, South Africa.*—Bertha Möller, Willem van de Venter.

*Pretoria, South Africa.*—Joseph Wadsworth, Benjamin Lloyd, John Johanssen, Albert Eardley, Mary Brown, Paula Frohling, Hannah Hyslop, Amelia Moore.

*Valkenberg, South Africa.*—William Brown, Alice M. Searle, Elsie Reyneke, Gunhild Norlin, Nellie Weighill, Ethel W. Foster, William Munyard.

*Devon County.*—Edwin Christopher, Harry Winson, Charles Tudball.

*Kent County, Maidstone.*—Agnes Cochran, Eva M. Vinehill, Hilda V. Peaple, Amy E. Smith, Jane Seary, Lilian F. Gordon, Daisy F. Alcock, Millicent Platt, Lily L. Freeman, William M. Wells, George S. Manser, John H. East, George Richardson, Ivan L. Conway, Bertie Dominey, Albert W. Chappell, Ada E. Chambers.

*Leavesden.*—Cecilia E. Mayes, Janet Davie, Adeline Richardson, Alfred G. Watts, Albert J. Webb, William Anderson.

*Lancashire County, Rainhill.*—John Physick, John P. Owen, Harry Atkinson, John H. Mytton, John Nadin, Stanley Slack, Frank White, Winifred Hughes, Louise Norry, Mary Coghlan, Minnie Wilson, Mary Pemberton, Frederick Lewis, Thomas Clitheroe, Frederick Poole, Dorothy Julian, Augusta Munder, Isabella Main, Annie E. Yates, Mary H. Shipley, Sarah A. Smith.

*Oxford County.*—Charles W. Lusty, George E. Newland, Cyril Keen.

*Salop County, Bicton.*—Charles Bilsborrow, Wm. Henry Chidley, Gladys Helen Minshall, Ethel May Jarvis, Percy Harold Jones, Arthur Morris.

*Staffordshire County, Cheddleton.*—Ada Godber, Nellie Cousins.

*Surrey County, Brookwood.*—Alice Lilian Gray.

*Three Counties, Hitchin.*—Sidney Fred Brister, Clifford Albon.

*West Riding, Yorks., Wakefield.*—Cissie Harriot Millns, Fanny Gee, Diana Mantle, Nellie Clayton, Alice Emily Cottam.

*West Riding, Yorks., Menston.*—Violet Hunt, Amy Longstaff, Lily Cawood, Agnes White, Maud Elsie Blunt, Violet Hare, Gertrude Lambert, Elizabeth Carr.

*Yorks. S.R., Wadsley.*—Eliza Ann Kay, Hetty Taylor.

*Birmingham City, Winson Green.*—Charles Bartholomew.

*Birmingham, Rubery Hill.*—Mary Emus.

*City of London, Stone.*—Minnie Jones.

*Derby Boro'.*—Benjamin Thirlby Wright, Ethel Boddington, Agnes Mary Drury, Arthur Horatio Townend, Catherine Annie Froggatt.

*Fountain Temporary, Tooting*.—Priscilla Elizabeth Knott, Annie Jones, Mabel Parker, Roger Charles Mills, George Thomas Hopkins, Frank Percy, Alfred Thomas Childs, Eveline Hamilton.

*Leicester Boro'*.—George Hill, Maud Mary Kellam, Grace Eva Heggs, Agnes Hardy, Edward Hirst.

*York City*.—Marion Brett, Annie Turner.

*Bethlem Royal Hospital*.—Dorothy Amelia J. Henley, Elizabeth Ellen Maddick, Sibert Clothier, Edgar James Belcher Davis, Alfred Charles Green, Albert Henry Joslin, Ernest Charles Nind.

*Camberwell House*.—Stella Mary Garvey, Ada Beadle, Alma S. A. Baker, Hilda Kemp, Olive Florence Crook, Mary Pryce, Ruth Westhead, Eva May Faux.

*St. Luke's Hospital*.—Alys Dreaper, Emmie Bower.

*The Retreat, York*.—John Wm. Kemp, Mary Hannah Bonson, Lily Evans, Annie Brosnan, Constance Evelyn Kent, Christine McLauchlan, Dorothy Hughes, Elizabeth Alison Gracie, Elgin Carnegie Ross, George Wiles, Walter Harrison.

*Aberdeen Royal*.—Annabella Thomson, Elizabeth Stevenson Watt, Margaret Milne, Elizabeth Hutcheon Lorimer, Barbara Jane Glennie, Catherine S. McPherson.

*Aberdeen District*.—Elizabeth Morrison Burr, Margaret H. Kennedy.

*Edinburgh District, Bangour*.—Janet Adams, Agnes Jane Aitken, Mabel Elizabeth Fawkes, Alison Wright Ferguson, Susan T. McGarvey, William C. Gibson, John Mackenzie, James Wightman.

*Edinburgh Royal, Craig House*.—Peter Flynn, John S. McLean, Margaret E. Ranken, Katherine J. D. Manson, Margaret D. McInnes.

*Edinburgh Royal, West House*.—Janet Macphail, Alice Croall, Laura Augusta S. Forsyth, Margaret N. B. Reith, Charlotte Margaret Ross, Jessie C. MacArthur, Jemima Reith, Laura Cross, Elizabeth McNaughten, Helen Anderson Eaton.

*Glasgow, Gartloch*.—Mabel B. Parffit, Jane Lyall Milne, Jane Annie Oselton, Agnes M. Samson, Mary Ellen Oselton, Isabella Newlands, Mary Macdonald, Jessie Sinclair.

*Glasgow, Woodilee*.—Ina MacKay, James Blain, Isabella Currie, Mary Downie, Margaret W. McEwan, Marion Rule Grant, Annie Mackie Baird.

*Hawkhead, Paisley*.—Alexander Craib, Mary Hamilton Reynolds, Jeannie McLellan.

*Inverness District*.—Annie Nicol, Mary McDonald, Annabella McLaren.

*New Saughton Hall*.—Janet Kirkaldy Petrie, Lillian Murray.

*Lanark District*.—Marion FitzSimmons, Annie Smillie Macintyre, Margaret Stewart Kirk, Mary Leggat Whiteside.

*Perth District*.—Agnes McLeish, Elizabeth George, Isabella Johnstone Masson, Margaret M. Murray, Alexander Lindsay.

*Stirling District*.—Jessie Finlay Robertson, Christina Hume, Margaret Garlick Webster, Kate Young, David Sutherland.

*Londonderry*.—Sarah McElbinney.

*Portrane*.—Mary McKittrick, Annie Holden, Michael Fagan, Joseph Patrick Watkins, John Phelan.

*St. Patrick's Hospital*.—Amelia V. Bowen, Lily Wilson.

*St. Edmondsbury*.—Muriel Elizabeth Doyle, Caroline O'Loughlin.

*Warwick County*.—Mary Hogan, Florence Eaton, Ida Taylor, Lillian Ella Hughes, Ellen E. Long, Edward Caleb Cusack, George Herbert Hancox, Albert Wilfred Masters.

#### FINAL : NOVEMBER, 1913.

*Devon County*.—Elsie Coombe.

*Essex and Colchester, Brentwood*.—Caroline A. Myall.

*Essex County, Severalls*.—WILLIAM J. BOWLER.\*

*Joint Counties, Carmarthen*.—Maggie M. Thomas.

*Leavesden*.—Flora M. Young, Harriet E. Ray.

*Staffs County, Cheddleton*.—Maud Nelson, Catherine McDonald, Mary J. Hodgson, Dora Manning, ANNIE K. BLACKBURN,\* Catherine Mackintosh.

*Yorks. County, Wakefield*.—Vincent Elgar, Herbert Mellor, Wilson Cartwright, Thomas W. Marshall, Mary A. Jackson, Elizabeth A. Hall.

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- Warwick County.*—Edith Hunt.  
*Birmingham, Winson Green.*—Francis J. Roper.  
*Birmingham, Rubery Hill.*—Ruth Goodall.  
*Sunderland Borough.*—William H. Gray.  
*Derby Borough.*—Walter Blood, Edith A. Tatton, Jessie W. Thorne.  
*City of London.*—Ella Reynolds.  
*Bethlem Royal Hospital.*—William W. Hewitt.  
*Camberwell House.*—Annie B. McLeod, Margaret A. Swann.  
*St. Luke's Hospital.*—Alice Shaw, Agnes H. Rae, Myra Baker.  
*Aberdeen Royal.*—Lizzie E. Taylor.  
*Edinburgh Royal, Craig House.*—Elizabeth Murray, Louisa E. McCutchen.  
*Edinburgh District.*—Annie G. Brown, James L. Wakelin.  
*Edinburgh Royal, West House.*—Florence Stone, LILLIAN ARROWSMITH,\*  
 WILLIAMINA FORBES,\* Annie S. Sim, Annie R. Bruce, Elizabeth A. de Lappe.  
*Glasgow, Woodilee.*—Rose Rattray, Marion P. Chapman, Elizabeth L. Reid,  
 Elizabeth Beaddie.  
*Paisley, Hawkhead.*—CATHERINE W. CRAWFORD.\*  
*Glasgow, Gartloch.*—Mary A. W. Allan, Katherine McLeod, Mary M. Ross,  
 Annie C. Macphail, Fanny Stallard, Mary O'Donnell.  
*Inverness District.*—Annie M. Campbell.  
*Lanark District.*—Susan W. Boyd, Mary B. M. Moir, Agnes Fullarton.  
*Midlothian and Peebles.*—HYLDA MARY HODGSON.\*  
*Portrane Asylum.*—Patrick J. Haugh, Laurence Kinsella.  
*Richmond District.*—Constance S. Bunn.  
*Fort Beaufort, South Africa.*—Clarace G. Roe.  
*Grahamstown, South Africa.*—Joseph C. Cherry.  
*Pretoria, South Africa.*—Tryntye Douma, Johannes Holtz, Joseph Derry.  
*Robben Island, South Africa.*—Charles J. Clark, Michael McGrath.  
*Valkenberg, South Africa.*—Beryl C. Morcom, Catherine C. Littlejohn.

\* Passed with distinction.

#### NOTICES OF MEETINGS.

- Quarterly Meetings.*—Tuesday, May 19th, 1914.  
*Annual Meeting.*—Tuesday, July 14th, 1914.

#### APPOINTMENTS.

- Carswell, J., F.R.F.P. & S.G., L.R.C.P.E., a Medical Commissioner in Lunacy for Scotland.  
 Fraser, Kate, M.D., Ch.B., D.P.M., a Deputy Commissioner in Lunacy for Scotland.  
 Sturrock, James P., M.D., C.M., a Deputy Commissioner in Lunacy for Scotland.  
 Taylor, A. L., B.Sc., M.B.Edin., M.R.C.P.Edin., Senior Assistant Medical Officer at the Govan District Asylum.  
 Turner, F. Douglas, M.B.Lond., Medical Superintendent of the Royal Eastern Counties Institution for Imbeciles and the Feeble-minded, Colchester.  
 White, Ernest W., M.B., M.R.C.P.Lond., Hon. Medical Adviser to the Joint Committee appointed to carry out the Mental Deficiency Act, 1913—County of Salop.

# THE JOURNAL OF MENTAL SCIENCE

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## Part I.—Original Articles.

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*The Biological Conception of Insanity.* By JOHN TURNER,  
M.B., Medical Superintendent, Brentwood Asylum.

### I.

I often hear it said that pathological anatomy has proved a failure in the attempt to solve the problems of insanity.

But has it? Even at the present time many of those cases which one is accustomed to hear quoted as failing to show pathological changes of a nature to account for their abnormal mentality, do show anatomical changes in the brain, and appearances which I have suggested are evidence of defective development of the nerve cells.

*Kidney.*—Naturally, the wider our field of examination of the tissues of the insane, the rarer is it to find any without some grave pathological change. Even in such fields as I can speak of from personal experience, I have found for a large series of cases, excluding general paralysis, pathological changes generally in the nature of vascular nephritis, or arteriosclerosis of the kidney, in 66 *per cent.* males and 78 *per cent.* females. Quoting from last year's figures of those cases whose kidneys were histologically examined, and which include chronic as well as acute, I find pathological alterations in 41 *per cent.* of males and 56 *per cent.* of females, and seven of the males and eighteen of the females were under fifty years of age. The

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kidney in my experience is the organ which is most frequently and most markedly affected in insanity, compared with those organs which I have chiefly studied. This fact was noted some ten or fifteen years ago in a paper by an American writer, whose name I forget, on kidney symptoms in insanity, and the conclusion which this writer came to was that insanity was a symptom of kidney disease. However much we may dissent from such a statement it seems to me the observations from which it was deduced at all events show the frequent implication of the kidney in insanity.

Parenchymatous changes occur to a less extent, but fatty degeneration of the tubal epithelium is very common, although often overlooked in default of using the special technique which is needed to show it.

*Liver.*—The liver appears to be neither so frequently nor so severely affected as the kidneys. Fatty infiltration and degeneration is found in about 50 *per cent.* of females, and 26 *per cent.* of males. Sometimes this change when of the nature of infiltration may have very little signification, but it is not always easy to determine how much of the fatty change may be infiltration, and how much degeneration. Most cases of acute delirium show pronounced fatty degeneration of this organ.

Cirrhosis is met with, but generally to a very slight degree, in 65 *per cent.* of the males and 37 *per cent.* of the females. It is usually a slight portal cirrhosis, except in cases of polyneuritic psychosis, in which it is a very marked feature.

Gallstones are much more frequently met with in the female :—In 1912, males 4·5 *per cent.*, females 15·5 *per cent.* ; in 1913, males 3·3 *per cent.*, females 17 *per cent.*

*Heart and bloodvessels.*—Valvular lesions are infrequent among the insane. Mitral are more common than aortic, *e.g.* among the autopsies in the Brentwood Asylum, extending over a number of years, mitral lesions, generally stenosis and of slight degree, were found in 21 *per cent.* of males, aortic lesions in 14 *per cent.*, among females, mitral lesions in 14 *per cent.* and aortic in only 1·5 *per cent.*

A developmental defect found in the heart of the insane may have some significance. I refer to a patent *foramen ovale* which I found some years ago among 235 consecutive autopsies in nearly 16 *per cent.* The aperture was frequently

large enough to put a pencil through, and although generally valvular, was in eight cases direct.

*Bloodvessels.*—Pathological changes in the arteries examined (including aorta, coronary arteries, basal, renal, and cerebral) were found in 77 *per cent.* of males and 81 *per cent.* of females. This is not including the periadventitial changes in general paralysis of the insane.

Naturally when the cases are divided into age periods the greatest incidence of disease is seen in the later, but even in the earlier, containing only persons under thirty, it is interesting to find that both among males and females over half the cases which die show arterial degeneration, and further among recent forms of insanity (recent that is as far as evidence obtained allows us to decide this question) the percentage of vascular lesions is not much below the general average, *e. g.* among forty female cases it was found in 72 *per cent.*

*Aorta.*—Taking all ages and forms of insanity, the incidence of atheroma is rather more frequent among males than females, being 58 *per cent.* and 50 *per cent.* respectively. Last year's figures gave 59 *per cent.* of men and only 26 *per cent.* of women. Under thirty years of age it was slightly affected in 37 *per cent.* males and 8 *per cent.* females. From thirty to fifty-nine it was affected in 57 *per cent.* males and 55 *per cent.* females. From sixty and upwards it was affected in 71 *per cent.* males and 93 *per cent.* females.

With advancing age the changes seem more severe among the women, and calcification was five times more frequent than in males.

*Basal vessels.*—Disease visible to the unaided eye is much less frequently met with than in the aorta.

Among insane males of all ages I only found it in 13 *per cent.*, and amongst females in 16 *per cent.* Below thirty years of age it is not found.

*Finer cerebral vessels.*—Hyaline thickening was found in 44 *per cent.* males and 37 *per cent.* females. Endarteritis only noted in 9 *per cent.* and 2 *per cent.* males and females respectively.

The pathological alterations were noted as frequently under thirty as between thirty-nine and fifty-nine, but from sixty upwards there is a marked increase in both sexes.

*Renal vessels.*—Pathological changes in these vessels are far



more frequent and more severe than in the brain. About half the male cases and 71 *per cent.* of the female show marked nodular endarteritis. Generally, it is the larger vessels of the pyramids which are affected, but sometimes all the smaller arteries of the cortex show patchy thickening of the intima.

What I have to say concerning cerebral lesions I shall refer to when discussing cerebral anomalies.

Thus even in the very limited field that I have gone over, grave pathological changes are noted in the majority of all cases of insanity who die, changes so far referring only to the bodily viscera.

But consider how very limited at present are the fields which have been explored, and at best incompletely explored! We may say that practically we are ignorant of all pathological knowledge concerning the sympathetic system. We know very little about changes in the posterior spinal ganglia, and not much about changes in the peripheral nervous system in relation to insanity (except perhaps in connection with polyneuritic psychosis).

Then the whole subject of the internal secretory glands is only just beginning to receive the attention it deserves, and no doubt in a few years' time the observations recorded in diseased conditions of these glands will materially help to swell the evidence in favour of an anatomical basis for insanity.

I submit that insanity is the expression of disorder of the brain the result of an anomalous condition of this organ, to which is superadded in most cases the evil effects of bodily disease, and by this I mean disease of other viscera than the brain.

I have already lightly touched on some of the diseased conditions met with in my own experience, and drawn attention to the large gaps there are in our knowledge of diseases of certain parts of the body, more especially the internal secreting or ductless glands. Even in my limited field of observation, it is comparatively rare to meet with a decently healthy insane body, no matter how young, at death.

I propose now to refer to some cerebral appearances seen in insanity, chiefly in the nature of anomalies, and to contrast these with those seen in the brains of patients dying in general hospitals, Guy's and London.

Before dealing with my own material, I shall very briefly

refer to J. Bolton's researches, very briefly because the reader is as familiar with them as I am.

Bolton's classification of insanity differs very considerably from those ordinarily held, and is somewhat difficult to collate.

He divides the insane into cases of amentia and dementia.

*Amentia* constitutes the mental condition of patients who suffer from deficient neuronic development, and includes all idiots and imbeciles, paranoiacs, cases of recurrent insanity not liable to develop more than mild dementia (so that this class can only be placed after they have lived out the allotted span of life, and if they should die early of some intercurrent disorder, can never be placed), cases of chronic insanity without visible dementia, hysteria, and true epileptic insanity.

*Dementia* is the mental condition of those who suffer from the effects of neuronic degeneration following insufficient durability (of neurones).

He leaves us in the dark where to place the large class now called dementia præcox. I suppose he is one of the few who does not recognise it, or perhaps I should say *did* not recognise it, as his monograph was published some years ago.

Although Bolton's classification does not seem to me entirely satisfactory—what classification is except in its author's eyes?—I have always considered his work, and his deductions from his pathological studies, as most valuable.

In one main point I am in complete accord with him, namely that there is an inherent cerebral defect in all cases of insanity, either deficiency or defective durability of neurones. I shall not refer in detail to the appearances he studied within the skull cap in his two hundred consecutive cases, from which he deduced that the morbid changes vary in degree with the amount of dementia, and that severe grades of dementia are associated with a much more extreme degree of vascular degeneration than occurs in non-dements, or mild dements of the same age.

As regards local atrophy of the cerebrum, he found that it was "greatest in amount" in the following regions, in the order named :

- (1) Prefrontal.
- (2) Frontal first and second.
- (3) Ascending frontal and Broca.
- (4) First temporal, and superior and inferior parietal.

## (5) Remainder of the cerebrum.

Although somewhat differently phrased this substantially, I suppose, is tantamount to saying that this is the order of frequency in which local atrophy occurs in these regions. If so, I should like to contrast it with a series of 172 cases of mine, in which, although I found the prefrontal most often affected, yet my other findings differed considerably :

(1) Prefrontal most frequently affected . . . . .	92
(2) Parietal . . . . .	56
(3) Frontal (1st, 2nd, and 3rd) . . . . .	38
(4) Central . . . . .	28
(5) Temporal . . . . .	9

Bolton has shown that in the cases which he studied of amentia there was a deficiency in the width of the pyramidal layer of the cortex as compared with its width in normal cases. This deficiency was found chiefly in the prefrontal region—the region he specially studied ; and he has produced evidence, embryological and anatomical, to show that this layer is intimately connected with the highest intellectual functions, and, further, that the innermost layer or spindle layer is concerned with the more animal functions of the body.

Watson's comparative studies on small mammals' brains are confirmatory of Bolton's deductions. Unfortunately reliable micrometric observations are of such a tedious nature that it is only possible for one observer to deal thoroughly with a very few (comparatively) cases ; and one has to be especially cautious in collating the results of one observer with those of another, as the personal factor is a large one. For these reasons, although it is very probable that his conclusions refer to the many cases of insanity included under his voluminous "amentia" class, it must remain for a long time only a plausible inference that in these insane there is, especially in those regions most concerned with intellectual processes, a definite lack of development or paucity of numbers of pyramidal cells, and that, with the added stress of disordered vital functions, the result of disease of the bodily viscera, we have the necessary conditions for the production of states of insanity.

My own observations on the cortical layer measurements are too scattered and unsystematised to advance either for or against Bolton's conclusions, but it has certainly struck me, in com-

paring the histological appearances of the different cell-layers, perhaps more especially in the prefrontal regions, that the innermost cells—the spindle cells—are those which, judging by their shape, absence of shrinking, and character of nucleus, more often appear intact than the nerve-cells of the outer layers, especially that layer which Meynert terms the second, but which Bolton includes in his pyramidal (Meynert's third) layer, an appearance which I take it is confirmatory of Bolton's views concerning the animal functions which the spindle-cells subserve. This, I may here remark, is equally seen in hospital cases. But we must be cautious of drawing dogmatic conclusions on such a point, because the outer layer-cells are very small cells, and probably, from their superficial position and delicate structure, are especially liable to be injuriously affected by our fixing reagents.

Many years ago I described an axonal Betz cell appearance found in persons dying insane. The first series of cases (5 or 6) where my attention was drawn to this feature were in a state of dementia (preceded in some by agitated melancholia), with paresis, involuntary jerking of limbs, diarrhoea, and death. An account of these was published in *Brain*, 1899, and two years later, Adolf Meyer, in the same journal, published an account of similar cases under the title of "Parenchymatous Systemic Degeneration of the Brain." Looking back, I am inclined to think that the appearance of the Betz cells in my first series was due to genuine reaction at a distance, or "axonal reaction," as Meyer more conveniently terms it. I believe so, as in one at least of my cases osmic acid showed definite Marchi degeneration of the large axons in the section which showed the altered cells, and I believe in all Meyer's cases Marchi degeneration was demonstrated in some part of the course of the axis cylinders.

Later on, in the *Journal of Mental Science*, 1901, I published a brief account of sixteen cases, where somewhat similar appearances were found in the Betz cells, and this last consisted of cases of dementia, melancholia, and imbecility, and I attempted to account for the association of two such conditions as melancholia and imbecility by assuming in both cases a lack of sensory impulses to the cells in question, leading in the first case to a devolution of the cell, and in the second to a lack of development. In support of these contentions I quoted



Warrington's experiments showing that on cutting through the posterior nerve-roots of the spinal cord, certain cells in the anterior horns of corresponding segments show axonal characters, due, he surmises, to interference with their functions from the lack of sensory impulses which usually impinge upon them.

My list of cases gradually increased, and before long every known variety of insanity, was represented by sections of the cortex showing Betz cells with axonal-like characters. But it was noted that in the great majority of instances the appearances are such as are only seen in a very early stage of axonal reaction, *viz.*, large plump cell, with remarkably distinct tigroid in branches and at the border of the cell-body, the centre of which is pale and filled with tigroid in the form of fine grains; the nucleus is large and often bladder-like, and either pushed up into the apex or against one side of the cell-body, its membrane being intact.

In the asylum cases, very many sections show every Betz cell with these appearances, but I have not reckoned any case as characterised by this form unless I could count at least six cells showing clearly the character, and only counting the cells in which the nucleus was apparent. One has to make some arbitrary rule where more than one form of cell is seen in the same section.

I am now able to quote a large number of cases of all sorts of insanity, where, by the rule above noted, I can give the percentage characterised by axonal-like Betz cells. Taking all forms together, it occurs in from 35 *per cent.* to 40 *per cent.*

It is least prevalent in general paralysis of the insane, only about 20 *per cent.*

In dementia præcox it is extremely rare, if ever, that it does not occur, and we may say that one may count upon finding it in every case of dementia præcox, katatonia, and generally in these cases every cell is affected. This refers to cases examined on the point for several years past. Of the congenitally defective without epilepsy it occurs in 60 *per cent.*; with epilepsy in 70 *per cent.*

In cases showing at one time or another melancholic symptoms, often with agitation, and in certain cases of dementia, 60 *per cent.* show this change (probably in some of these cases the change is a genuine axonal reaction, and not, as suggested of the others, the result of an inherent anomaly).

*Signification.*—As I have previously stated, it soon became evident to me that this form of Betz cell was not entirely due to axonal injury or disease, in fact in only a very few cases would such an explanation be at all adequate. In the first place, although sections of the cord containing the axons of the altered cells were examined, and likewise other regions through which they passed, it was very rare to find any evidence of Marchi degeneration in these structures.

And, secondly, it was noted that in a very large proportion of all the cases the cells were in what would represent a very early stage of axonal reaction, although clinically many of the cases were of very long standing. If an axonal change was to account for the appearance, almost certainly a very much larger number would have shown more advanced stages of axonal reaction. We can scarcely imagine that nearly all the cases die just when the axonal reaction is beginning.

On studying the incidence of these cells in different classes or varieties of insanity, some further light is, I think, thrown on their significance. Thus, the congenitally defective and cases of dementia præcox yield the highest percentage, and general paralytics, that class which is the best endowed physically and mentally, the lowest. Lugaro (Riv. Sperment. di Fren., 1902), states that types of cell corresponding to the phase of reaction and repair (axonal reaction) are found in certain stages of phylogenetic development, and that the slighter form of reaction is normal in some of the nerve cells of the lower vertebrates.

Van Biervliet pointed out the resemblance of the reacting cell to an embryonic nerve-cell, and I can corroborate this statement by my own observations, for in the new-born rat I have been struck by the predominance of two of the most striking features of the axonal-like cells, characterising the young nerve cells of the cerebral cortex; I refer to the large bladder-like nucleus, and its peripheral situation.

It was from a consideration of these facts that I was led to conclude that the form of nerve-cell I am describing was in reality not a pathological condition, but an anomaly indicating a defectively developed, and, therefore, probably a cell of deficient durability.

I am not wishing to suggest that there is a direct relation between morbid mental manifestations and this appearance. But I have singled the Betz cells out, as from their large size

and prominent structure they are convenient objects to study, and I imagine that their development or lack of development will proceed *pari passu* with the smaller and less easily studied nerve-cells. Certainly I find that when the majority of the Betz cells show these characters the large pyramids are similar. So that they may be likened to sign-posts.

For some years past I have been endeavouring to collect and examine a number of general hospital cases in order to contrast their cells with those in the insane, but I have not been able to succeed, until quite recently, owing to the kindness of Dr. Turnbull of the pathological department of the London Hospital, and Dr. French of that of Guy's. My examination is not completed, but so far as it goes, the results so far as regards the axonal character of the Betz cells are what I anticipated, viz., that they occur, but in a smaller number of cases, and also, in those cases where they are met with, a smaller number of the cells show the change than one is accustomed to find in insane cases.

It must have been merely a matter of chance that some of these hospital cases died in a general hospital and not in an asylum, but without doubt a larger proportion of what are termed sane people will fall into the hospital class. One of my Guy's Hospital cases appeared to be a general paralytic, but he was labelled as having died from uræmia.

The following is a very brief account of the cases so far examined—viz., fifty—as compared with asylum cases.

The distinctive points which have struck me most in the two series are :

(1) The much greater frequency of the form of cell I have termed "immature" in the asylum cases.

(2) The greater number of subcortical nerve cells in the insane.

(3) The greater frequency of gliosis in the white matter adjacent to the cortex in the insane.

As regards yellow pigmentation of Betz cells, the occurrence of corpora amylacea (or colloid bodies), the occurrence of halo degeneration of the nerve cells, and hyaline thickening of the cortical arteries, I did not find that in any of these particulars were the asylum brains more frequently affected than the fifty hospital cases. In fact as regards excessive pigmentation of the Betz cells, this was more frequent among the hospital cases.

I am under the impression that in a sufficiently large number of comparable cases the insane would show both a greater tendency to arterial degeneration and to the production of corpora amylaceæ, but comparing the fifty hospital cases with fifty asylum cases not selected, as I say, I find no preponderance of this change in the asylum cases.

Among the hospital cases 22·2 *per cent.* showed more than six Betz cells with axonal-like characters, but it was very rare to find a section showing more than seven or eight. Among the hospital cases were three of 5 years or under, and if we deduct these the percentage showing axonal cells is reduced to 18 *per cent.* Probably about 20 *per cent.* of a hospital population shows the feature; very much the same proportion as is shown among general paralytics, but far below that of the general asylum population. And whereas in a large percentage of insane cases (28 *per cent.*) all the cells are affected, in only 2 *per cent.* of the hospital cases was this found to be.

*Subcortical nerve cells.*—The comparison can only be rough in default of actually counting every subcortical nerve cell seen, which has not been done.

They are noted as numerous in 8 *per cent.* of hospital cases against 14 *per cent.* of asylum, and among epileptics only they were (some years ago) noted by me as numerous in 75 *per cent.*

*Gliosis.*—The distinctive character between the two series would seem to be the greater frequency of gliosis affecting the white matter subjacent to the cortex. My figures are 6 *per cent.* of hospital cases against 28 *per cent.* of asylum, and this seems to apply to the cerebellum as well. As regards zonal or molecular gliosis, although the asylum cases are more frequently affected, yet the difference in the incidence is much less than in the white matter.

In concluding this section it seems that the evidence derived from embryology, comparative anatomy, and the study of the incidence of the changes in different forms of insanity, and in the sane community, all tends to show that *the form of cell* I have termed immature is an anomaly depending on defective development.



## II.

It is with the greatest diffidence that I venture on psychological questions.

Very likely much of what I advance will be easily refuted, but nevertheless I do not think that anything said will alter my views. Probably because one of these views is that man is not a reasoning being in the sense that his conduct is guided by reason, although he supplies reasons (later on) for his conduct, he is, it is suggested, a rationalising being. This view is impressed upon me by observation, by introspection, and by physiological evidence.

Whatever our philosophy, and however firmly we believe in it, it does not influence our conduct. I am persuaded that we do things because we want to, and not because we can show adequate reasons for doing them. Our motives are of the nature of tropisms, and our characters are more the outcome of what we eat than what we think. No one acts up to his beliefs. Any business man who believes he is a Christian would infallibly be bankrupt were he to conform to the tenets he says he believes. Reason does not enter into the carrying out of the most important of all our acts—love and marriage—we fall in love with some very ordinary female purely from physiological causes, and we invest her with all sorts of desirable attributes which probably she does not possess. This is a biological act.

Scores of people from philosophical reasons have come to the conclusion that life is a dismal failure, and that death is far to be preferred, but they do not commit suicide, because, in ordinary phraseology, they funk killing themselves, or more correctly because the instinct to live is too powerful.

Balfour, in his Gifford lectures last year, referred to atomism and the theory of conservation as illustrations of beliefs having gone before evidence, and of the evidence later on justifying the beliefs. Is not this rationalisation? The evidence supplied after the belief I suppose always seems to justify the belief, at any rate to the holder of the view.

A delightful writer contributes a short leading article to the *Times* every day, generally on some psychological question, and the other day he dealt with myths, ancient and modern. It is only a short article, and I shall quote largely from it, as it seems to me to bear out what I am saying :

Men have always enjoyed making myths about the origins of things. For instance, nearly every race or tribe of men has its myth about the origin of evil. . . . Primitive man saw evil everywhere about him, and he asked himself how it began. In answer to this question he made a story about its beginning. The scientific investigator sees religion or the drama equally prevalent, and asks himself how it began; and in answer to his question he makes, not a story, but a theory. But he usually assumes in his theory, just like primitive man in his story, that man in some remote past had some particular reason for worshipping or making plays which does not exist now. No one now would look for a particular reason for either of these activities. Men make plays because they want to make them, just as they make love; and they worship because they feel the need of worship. . . . (He then amusingly speculates on the origin of pictures, and shows how probably they had a commercial origin.) For some thousands of years, how many is uncertain, advertisement consisted merely of the recommendation of wares by printed words, which almost entirely covered all buildings. But at some period, not yet precisely ascertained, someone, probably a vendor of soap, introduced a crude representation of a piece of soap into one of his printed advertisements. The innovation must have aroused great interest, and largely increased the sale of his soap. Then, some generations later, under the stress of competition, another soap merchant produced a representation, no doubt very imperfect, of human beings washing themselves with his soap; and this was the real beginning of pictorial art and also the explanation of the remarkable prevalence of the nude in the pictures of several succeeding centuries. . . . Now, if a theory of this sort were presented to us about the art of our time we should be surprised, not so much at its errors of detail as at the notion that any theory should be needed at all. We make pictures as the palæolithic men made them—because we like them. And this liking for pictures always has existed, and always will exist. There is a perpetual impulse to produce pictures which is not started by any particular pretext, but exists in the nature of man, and if our memory of the past could suddenly be wiped out of our minds, we should begin to make pictures again just as they have been made in the past. We cannot explain why we have this impulse to make pictures, but we know enough about ourselves to be sure that any explanation which finds some accidental and external cause for it is absurd.

The present generation interests itself a good deal in psychology and metaphysics—a few years ago there would have been, I suspect, no demand in a general daily paper for such articles as the one I have just quoted from.

The teachings of Bergson, of Freud, of Balfour, and others are much in men's minds, or, at all events, much on men's tongues. In the medical world, Freud's teachings are most to the front, and questions bearing on the use and application of "Psychoanalysis," the interpretation of dreams, etc., etc.

However much dissent there may be from particular detail of Freud's philosophy, it is certain that his teaching contains much of great value, but, like all new doctrines or new modifications, time alone is the criterion which will determine what is to remain and what must be discarded.

If we are deterministic beings, that is, beings whose acts are rigidly determined, and if all our motives boil down to motives of hunger or lust, it will be impossible to find any chance act, or any act, that has not a sexual or hunger root. It seems to me almost inconceivable, but I suppose there is a hidden sexual meaning in a run of luck at cards, or in holding a good hand at bridge.

McDougall, whilst referring to the wide connotation of the word "love" with some psychologists, contends that if it is synonymous with sex-love, then "we shall have to attribute even the love of truth, or of the differential calculus, to the sexual instinct" (*Proceedings of the Royal Society of Medicine*, Sect. Psych., March 10th, 1914).

But if you accept these postulates, there does not seem to be much room in the scheme for reason, if we have no choice in the matter, and no variety in the motive.

I think some of the deductions the Freudians make concerning the origin and evolution of normal sexual love are quite untenable, because they are anti-physiological.<sup>(1)</sup>

In certain mental disorders, such as dementia præcox paranoides, a tendency for homosexuality in its most objectionable form is met with amongst men. I have no personal experience of its occurrence in women. Freud contends it is always found. We must, however, be cautious in concluding that, because we meet with certain symptoms in involutional or devolutional processes, that therefore these symptoms have been present in some stage of normal evolution.

But, apart from observation and introspection, there is, I believe, in Pawlow's recent work on the nervous system physiological evidence which seems to show that much of our conduct is not susceptible of a metaphysical explanation. His experiments tend to support the biological conception of mind. His investigations show that the cerebrum is essentially an organ for forming reflexes—that new reflexes are continually being formed, and probably transmitted.

He has produced experimentally and studied new reflexes,

which he terms "conditional reflexes" because of their great dependence on a multitude of conditions.

The animals on which he worked were dogs, and the reflex which he chiefly studied was the secretion of saliva. (The quotations following are from Pawlow's paper in the *British Medical Journal* of October 18th, 1913.)

"A fundamental condition for the formation of a conditional reflex is that whatever indifferent stimulus is chosen for the purpose of the reflex which it is desired to build up is given at the same time as the food or acid is introduced into the mouth. After a few such sittings it will be found that this formerly indifferent stimulus alone is now capable of calling forth a secretion of saliva. The conditional reflex has been formed; the formerly indifferent stimulus has now found a path to the requisite parts of the central nervous system. The reflex arc now has a different afferent neuron.

"Conditional reflexes can be formed not merely from indifferent stimuli, but also from a stimulus which is more or less closely connected with some special centre in the brain. A good example of this is seen in the experiments with nocuous stimuli, which in common terminology are called painful stimuli; the usual result of such a stimulus is that the animal does its best to defend itself against the stimulus and to get away from it if possible, or to attack the source of the painful stimulus. But it is possible without any great trouble to modify this response by systematically accompanying each feeding of the animal (that is to say each stimulation of its feeding centres, for there are as good reasons for the existence of the feeding centres as for that of the respiratory centre) by strong electrical stimuli applied to the skin. We now find that even the strongest electrical stimuli applied to the skin give rise merely to the feeding reaction, that is, to secretion of saliva, and to no symptoms of fright or pain at all. The skin of the dog can now be subjected to cutting, pinching, or burning, and the only result we shall obtain will be the manifestation of what, judging from our own experience, we should call the symptoms of the keenest appetite; the animal follows the experimenter about, licks himself, and saliva flows in abundance. This fact has been demonstrated very frequently to large audiences, and to many of my friends privately, and the result can invariably be obtained. Its significance seems to me to be quite clear, for what other explanation is more appropriate than that the nervous impulse resulting from the stimulus, which formerly went to a particular region of the nervous system, is now directed to a different one? In this way we have been able to divert the impulse from one path to another, according to the conditions, and we cannot avoid the conclusion that this represents one of the most important functions of the highest parts of the central nervous system."

The conditional reflex is established by specialised parts of the central nervous system which Pawlow terms analysors, comprising the—



- (a) Peripheral end organ of the so-called sense organ.
- (b) The nerve fibre belonging to it.
- (c) Its termination in the cells of the cerebral hemispheres.

Such analysors are incessantly at work controlling the reactions of the living organism to its changing external conditions, and "many results we now ascribe to metaphysical processes are really only due to the fine and accurate work of neural analytical mechanisms."

"The experiments on conditional reflexes with skin stimuli are specially striking. Since at the commencement all skin reflexes are generalised, it is easy to render mechanical stimuli of each of several large skin areas a conditional stimulus for the feeding reflex. If now certain parts of the frontal lobes of the brain be extirpated in such an animal, it will be found that the conditional reflex cannot now be obtained at all from a particular and sharply delimited area of skin; in all other parts, however, it can be obtained in the normal manner. It is a fact of some importance, also, that on stimulation of the inactive skin areas one obtains a strong *inhibition* of the effect got by the stimulation of the active areas; and that, further, such stimulation of inactive areas leads very quickly to drowsiness and sleep.

"Conditional reflexes can also be obtained from stimuli from the locomotor apparatus—for example, from the joints, when the latter have been differentiated from the skin stimuli. The proof that such differentiation is attained is furnished by the extirpation of parts of the frontal lobes. When one part is extirpated, the reflex is obtained from the flexion of the joint, but not from the skin; if a different part be removed, we can get the skin reflex, but not the reflex from the joint."

He also investigated certain conditional visual and auditory reflexes in dogs with ablation of the greater part of the posterior part of the cerebrum, from which it appeared that "the limits of accuracy of the analysor's are, to some extent, at all events determined by the cerebral apparatus, and that partial destruction of the central end of the analysors leads quite definitely to some special limitation of the activity of the analysors."

He relates a very interesting experiment on ablation of part of the brain.

"In this dog the anterior half of the brain was taken away, and all the reflexes which had been worked out on this animal disappeared. The animal appears to be completely helpless, and to have lost all its normal relations with the outer world; it cannot take food which is placed before it, it recognises no objects, persons, or animals, and when it attempts to walk it encounters every obstacle and gets into all kinds of difficulties. And yet even in such an animal there can be found a

link with the normal complicated nervous reactions ; we can train it to give that response of the salivary glands which we have called 'the water reflex.' In a normal dog when water is poured into the mouth, there is usually no secretion of saliva, or at most a few drops. But, if first of all an irritating substance—for example, a little acid—be introduced into the mouth, the subsequent administration of water will produce an abundant secretion of saliva.

"Apparently the various stimuli which accompany the forcible introduction of acid into the mouth, and which also accompany the reflex secretion which follows upon this, become converted into conditional stimuli for the reaction to acid ; as such they would also come into play in the administration of water. This secretion of saliva in response to water has all the characters of a conditional reflex. In the animal which I have just mentioned it is also possible to work out the conditional reflex to water in all its normal details. This result has also been confirmed in another animal in which the centre for smell had been spared, but which in other respects resembled the previous one. In this animal it was possible to train smell reflexes also. These animals, speaking psychologically, were uneducable idiots when judged by their locomotor systems, but as judged by their salivary apparatus they were rational beings enough."

In a leading article of the *British Medical Journal* of the same date as that in which Pawlow's paper is published, the writer asks this pregnant question : "Will it be found that our every thought and deed is a reflex, and man a mere automaton conditioned by his various reflex mechanisms, and his environment ?"

Until the publication of Pawlow's researches, it seemed as if the limits of knowledge by physiological experiments on the cerebrum had been reached, whilst yet the greater part of the convolutions was practically of unknown function, or at most known vaguely as an association area, but his work opens up the prospect of much further penetrating into the exact functions of the cortex. It also flings fresh light on the problem of mind.

Much of the conduct and the delusions of the insane is, I believe, susceptible of explanation on a conditional reflex basis. I will merely refer to one case typical of very many.

I was examining a woman in order to fill in her continuation certificate. She was a case of systematized delusional insanity, but, like many such patients, had an annoying way of not committing herself, although I knew she still retained her delusions. I took her over all the delusions and hallucinations referred to on the admission certificate, but she repudiated

with scorn all my suggestions, and answered in a rational enough manner. When questioned as to "voices," she admitted that she had been troubled by them, but not for two years, and when I touched on a former statement about men coming into her room at night and threatening her, she admitted that her mind must have been unhinged at the time to entertain such absurd ideas, for, as she explained, it would have been impossible for a strange man to come to her bed here and threaten her life, "because he could not possibly know" which bed she occupied in the dormitory. I asked her other questions, especially if she was subject to any annoyance or trouble, and she answered me "No," and was apparently most candid and open.

It may have been my stupidity, but I spent quite a long time without extracting anything showing her insanity, when the nurse quietly remarked, "What about that mesmerism, Mrs. P.?" and a change came over the woman's face, and she tried to pass the matter over. But now the whole train of delusive ideas poured forth. She was tortured by a "mesmerism" left behind by some man sent from the police. A "mesmerism," she told me, was a "ball of ether," which disperses and gets into her hair, etc., etc. She seemed to be quite aware that she was giving herself away, but quite unable to help herself, and at the end of my examination she said, "I think it is very unfair of you to associate this mesmerism—which is a *fact*, not a delusion—with the state of my mind."

I think such a phenomenon, one I have frequently met with in a similar form, and which doubtless many will corroborate, is susceptible of an explanation on the assumption of a conditional reflex having been formed on a basis of some painful impression, to which a rationalistic explanation has been attached.

The stimulus to the reflex in question was the word, "mesmerism," and when this was applied, and not until then, the response came off.

If my conception of insanity is correct, and by "my" I mean merely the conception that I hold, as the idea itself is as old as the hills, then obviously the proper person to treat insanity is the physician, not the metaphysician, or psychologist, and, further, there is no necessity for him to comprehend the disordered mental states in order to correct them. He will

endeavour to correct the disordered bodily functions, and if he succeed, the mental will also be adjusted.

In the discussion which followed the reading of this paper it was contended that I did not show the correlation between the bodily signs and the mental phenomena. Nor have I ; nor do I pretend to.

I merely contend that just as we say we can account for a pain by certain bodily conditions, and just as we can relieve the pain by correcting them, so we have a similar association between bodily states and insanity, and just as it is not necessary to comprehend the real meaning of pain to relieve it, so it is not essential to study mind to adjust its disorders. I am only preaching the ancient doctrine of a sound mind in a sound body.

(<sup>1</sup>) One of the most brilliant of Freud's disciples in England tells me that this idea is not and never was held by Freud. Nevertheless, in a brief notice of a work by Freud on "Paranoia" in the *Journal of Abnormal Psychology* (vol. vii, April-May, 1912), my informant writes, expressing, I take it, Freud's views: "In the passage of the normal child from auto-erotism to object-love, there is a stage in which, when the auto-erotic impulses are being grouped into a unity so as to seek an external object, the first object utilised is the individual himself, a condition known as 'Narcissism.' The passage from this to normal hetero-sexuality leads over homo-sexuality. In dementia præcox Jung and Abraham have shown that what happens is a return to primitive auto-erotic activities. In paranoia, the arrest of development takes place at a later stage, so that the return is to a life of phantasy concerning narcissism and homo-sexuality." It seems to me that most people would interpret these sentences in the way I have in my text.

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*Healing and Training (Heil und Bildung).* By Dr. ALEXANDER NEUER, Vienna.<sup>(1)</sup> (Translated by T. DRAPES.)

"He, verily, did not hit the target of truth who took for his missile the phrase, the Desire for Existence ; not the Desire for Existence—such is my teaching—no, the Wish for Power !"

OF all those who kept outside the psychology of the schools, and were psychologists in spite of it, Nietzsche is one of the greatest. We may not unfairly deny the significance of the fabrications of his speculative and ethical philosophy—the present does not, as it is, overrate him in reckoning him merely as a poet—but his deep psychological intuitions, in which he towers far above such essentially kindred minds as Montaigne, Amiel, and Vauvenargue, assure for him immortality. I repeat, in



spite of the psychology of the schools, which plumes itself on the fact that it is based on the sure and verifiable ground of foreign laboratory observations. Only this laboratory psychology has purchased its apparent exactness dearly ; it has gained the most universal and the most abstract laws of soul-life, which are no laws—or are, perchance, the meaningless association-rules laws?—and has lost the reality, the active individual, the living personality. From an historical standpoint one can understand, and pardon, this monstrosity. It was due to the victorious march of the natural sciences in the last century, which, on the one hand mathematical, on the other experimental methods made possible. The injury which this looking askance at natural science has caused has nothing to commend it. Everything which physiological experimental psychology has to exhibit in the way of fruitful results has no interest at all for the psychologist ; it is purely physiology of the senses. Let a man judge with unprejudiced mind whether he can learn how to understand any individual by the knowledge of which reaction takes place more quickly, motor or sensory, accurately expressed in thousandths of a second ; or by knowing that in rapid reading only the first letters of a word are discerned, and of these only the upper part, and other such-like facts. If I may be pardoned this piece of exaggeration, it seems to me that the dog who knows how to correctly interpret the threatening attitude of his master is a greater psychologist, that is to say, mind-expert. I know that a Jaques Loeb would “trace back” even this reaction of the dog to tropism, and ultimately to optico-chemical transformation of energy, or, as he would say, explain it in this way, only I think in this case one has “understood” this dog just as little as we would understand his master were we to explain his threatening demeanour by chemical processes in muscles and nerves. One objection, however, and certainly a vital one, as regards the psychology of the schools, I will admit, an objection which scholasticism has already recognised ; the individual is inexpressible ; that which makes the individual, the quite specific, the altogether peculiar quintessence of his nature, cannot be clothed in words. Here is the salient point. Whoever grasps this in all its bearings will understand why the possibility of a scientific psychology of the individual was so long a matter of doubt. But men of insight knew that failure to reason out is

not agnosticism ; the conviction that the essence of the world and of the ego is more than "the wisdom of the schools imagines" can hardly be judged to be the same as the belief that this essence is incapable of recognition. We may, perhaps, say that the path to the goal is difficult, is interminable, but every step which we take on this path leads us nearer to that goal, the comprehension of this essence. To one thing only must we not give credence ; this path is not the path of association-psychology. And here let it be understood, without further confirmation, but certainly correctly, that under association-psychology is included every psychology based on the teachings of natural science, even the apparently voluntary psychology of Wundt.

But where shall we find a criterion which will show us that we are on the right way ? Or, to put the query in another form : How is an individual psychology possible which is more than physiology and phenomenology ? With respect to which it may be observed that the essential need, and the immeasurable value of a science of phenomena since Dilthey—he spoke of descriptive and anatomical psychology—Brentano, Husserl, Stumpf, and Th. Lipps, have only been recognised within the most recent times, nay, strange as it may seem, even by the Würzburg-Bonner-Kulpe school, which had to convince itself that the individual is not to be got at by experiment, and so at first, to its own amazement, as thought-psychology, it assisted phenomenology. But phenomenal science, or, as Hans Driesch has lately styled it, the science of self-consciousness, is not psychology, is only a necessary hypothesis of this, which, in spite of assurances to the contrary, must be emphasised, because the outcry in favour of the identity of phenomenal science and rational psychology is on the increase. Losskij's intuitivism and the Lipps' school suffer from this error. Here we may also refer to the general psychopathology of Karl Jasper, a book which would have redounded to the honour of a professional psychologist. But even for him phenomenal science is rational psychology, although he sharply distinguishes this from the materialistic psychology.

The psychology of the individual must be more than the science of phenomena. To us, Viennese, it would now seem very natural to think that the road which Freud's psycho-analysis has pointed out might perhaps lead us to individual

psychology. I must confess that in psycho-analysis I am unable to discover a method of any novelty. For by analysis one understands either the geometrical method of analysis, which was known to Euclid, a method which accepts the thing sought for as known, and by conclusions drawn deductively therefrom, comes back to demonstrated truths. In that case analysis is a method not specific to psychology, but is proper to all the mental sciences and to the "abstract" sciences of mathematics. Or one understands by analysis a kind of chemical dissociation; in that case such a clumsy metaphor for psychical phenomena is to be rejected from the first. And as regards the material result which Freud thinks he has gained by his psycho-analytic method, he often surpasses in naïvete the brain mythologies of association-psychology. But Saul set out . . . in that way Freud found much which might be co-ordinated into a rational psychology, which individual psychology alone can constitute. If he had only laid aside his little physiological mantle!

Possibly the right way might be found if one learned how to avoid the fundamental error which association-psychology perpetrated. Its hopelessness was a matter of early detection; nay, even in their own camp, dissatisfied thinkers, amongst them Wundt in particular, arose, who opposed themselves to the "mechanistic" theory, on spiritual grounds. I need only remind you of Wundt's principle of creative synthesis, the foundation pillar of his voluntarism. And yet this position amounted to only a half measure. Remember that to Wundt, the voluntarist, will is not the last, simplest element of the soul, but can be traced back to sensations and feelings. And that is, moreover, not at all so surprising, when one remembers that he, as we know, sprang from the camp of association-psychology.

William Stern, in his work, *Person and Thing*, 1906, has clearly recognised the error. He saw it in the "materialistic" method of observation, in the mechanistic-causality which mis-directs us to break up into fragments the psychical, after the fashion of nature in general, and between these psychical atomies to seek for governing relations. Stern, on the other hand, founds a theory of "personalism," an inherently-teleological method of observation, and this seems to me to smooth the way to an individual-psychology. But Stern's "differential

psychology," on the one hand, involves methods which coquet too much with those of experimental psychology ; and, on the other hand, as far as its content is concerned, waives all claim to being individual-psychology. Thus, such a psychology was wanting up to the present, and had not psychological novel writers, dramatic poets, bold metaphysicians of the Ego, such as Schopenhauer, Hartmann, Bahnsen, and Nietzsche, without expressly speaking of it, and more intuitively than discursively, touched on individual-psychology, the hope of obtaining a "scientific" insight into the human soul would not only have remained unfulfilled, it would never have been even awakened. And the phrase would have remained true : the individual cannot be explained.

Then, lately, I came across a certain school, which was said to be an offshoot of the Freudian school. I was able to convince myself, that this assigned origin was a bare historical fact, which, however, beyond this, had no inherent connection with the teaching of that school, none at least, so far as to be taken into consideration in the founding of an individual-psychology. For, putting aside all matters of medicinal therapeutics, I found, for the first time, in Adler's *The Nervous Disposition* all that which neither phenomenal science, nor Stern's differential psychology, could, or would, offer, the "comprehension" of the individual from his inherently-teleological aspiring disposition. And now a book has made its appearance which has convinced me of the fruitfulness of individual psychology.

Under the title *Healing and Training* (Medical-Educational works of the Society for Individual Psychology, edited by Alfred Adler and Karl Furtmüller, published by Ernst Reinhardt, Munich, 1913), this school gives publicity to its work. I will not here find fault with trivial defects, will not mention how much uncritical matter this school will have to get rid of in order to keep clearly separate the standpoints of a materialistic and a rational psychology ; everything of that kind shall here be kept in the background, because it seems to me important to emphasise that fundamental tendency which combines into one the separate works of these investigators culled from the most widely different regions. And now, to plunge in *medias res* !

He who wishes to apprehend in his inmost heart the life of the soul must know the leading lines, the life-plan, the aim and



goal towards which every utterance of the soul is tending ; everything which in the widest sense might be called expression, sign, or symbol of the soul, such as play of features, words, and actions. It may be incidentally remarked that, what is still wanting at the present day, a semasiology, as Heinrich Gomperz called the "doctrine of signification," would be of the greatest use. Adler, starting from an organic-inferiority theory, which in this connection will be touched upon, has now found that this central point—the inmost core—the essential characteristic of the human soul, is its tendency to expansion. Here his doctrine comes into touch with the deepest intuitions of the voluntarists. But in opposition to Schopenhauer, for whom the blind wish for existence constituted the real being, and also in opposition to Nietzsche, who, as quoted at the beginning, regarded the wish for power as the essence of humanity, Adler knows that the will, as a psychological category, cannot altogether exhaust the individual, because this is a psycho-physical complex, or, as Stern says, must be designated as a psycho-physical neutral. For this expansion-tendency Adler has, by way of illustration, and in special instances, coined synonymous terms, *e.g.*, he calls it the striving after the ideal personality, or the striving upwards ; often, too, the "manly" protest (taken in the sense of the difference between man and woman, as to-day it specially strikes the child) ; sometimes he also speaks of the aggressive impulse. In every case this expansion-tendency is the constant factor, the variable factor being the *milieu* in the widest sense, consequently the surrounding world, living and non-living, the people that surround us, society, the objective spirit, so far as it lives embodied in language, customs, religion, and law, but especially the parents, brothers and sisters, and teachers. The product of constant and variable factors must itself be variable ; the leading lines, in spite of equal expansion-tendency, are manifold. Let one only think of Nietzsche's Ressentiment in order to grasp what Adler understands by it. For the attainment of his life plan, of his ideal personality, the individual at one time makes use of the instinct of self-defence, while he apparently avoids danger and opposing influences only in order to circumvent, and yet thus to overcome them ; but at another time he makes use of the aggression-impulse, which only still more strongly emphasises the expansion-tendency. But keep

in mind that all this must not be known to the individual himself. If other theories have to dovetail the unknown into their constructions, this individual psychology has no such need. For it the individual stands outside the antagonistic principles of psychical and physical, or, better still, this antagonism does not affect its existence at all, because it itself separates the psychical and the physical as groups of phenomena merely for scientific purposes.

From this aspiring disposition can, then, all psychical peculiarities of the individual be easily understood. Obstinacy, courage, ambition, bravery, imperiousness, desire for knowledge, and so on, on the one hand; on the other, anxiety, shame, shyness, envy, mendacity, cowardice, submission are to be understood as either aggression or self-defence. "It is as in the case of the growth of organisms generally, plants for instance; some break through every obstacle, and courageously struggle upwards; others crouch humbly and creep timidly along the ground, until they emerge with hesitation and clinging to others for support. For they all have an upward tendency towards the sun" (Adler, p. 120). To bring the line of life within the limits of a narrow formula is, of course, an easier task in extreme instances, especially in cases of illness, and so it is not to be wondered at that it was a nerve-specialist who pointed out this way to individual psychology. The guiding line and its distortions are also obvious in the case of the child, who has not yet learned to make the most of its possibilities in order to satisfy its expansion-tendency. It is just its helplessness and feebleness, the feeling of inferiority, which, as Adler says, are genetically the origin of its permanent traits of character in after days.

It is precisely for child psychology that this individual psychology proves its fitness. As in the case of ethics, jurisprudence, and the mental sciences generally, so pedagogics have also been destitute of psychological basis. What passed itself for this, as, for instance, Meumann's experimental pedagogics, was it only then, when, in spite of the experiment, it was not the investigator but the subject who was the spokesman. Now, it is just pedagogics which are the best touchstone as regards the value of a psychology. Let one merely read what Adler says of parents' training, or Otto Kaus on the unveracity of the child, or Carl Furtmüller about self-invented fairy tales;

let him read the individual memoirs on the choice of a calling by Stefan von Maday, Adler, and Joseph Kramer, and he will understand why this teleologically-orientated individual-psychology seems to me to merit preference over the dreary and miserable association-psychology in all its kinds and varieties.

As regards its contents, the book is divided into two parts. The first consists of Adler's papers which appeared during recent years in numerous journals, and so furnishes a picture of the development of his ideas, which had their origin in the organic-inferiority theory. But it is not so much this theory itself, as the method of psychical investigation gained through it, that seems to me to be the novel and significant feature in Adler's teaching. The second part includes works emanating from the circle of those to whom, partly the common outcome of Freud's psycho-analysis, partly chance, made Adler's views known. To widen the circle of fellow-workers in individual-psychology, which is demanded in nearly every department of psychical life, is the hope of the editors. But to anyone who looks upon the bringing up of youth as the primary task of the family and of society; to him who knows that the present-day training in school and home is directed to external advantages, mental and bodily rather than to culture; to him who, with Nietzsche, wishes the coming generation to reach a higher standard than the present one, I would above all things like to recommend a study of this book.

[*Note by the Translator.*—The title of the foregoing paper does not, perhaps, at first sight give a very clear idea of the nature of its contents. If, however, we substitute for the abstract terms, "Healing and Training," the corresponding concretes, "Physician and Teacher," this will more correctly indicate the *motif* of the work reviewed by Dr. Neuer. A society for the study of "Individual Psychology" has evolved itself in Germany during recent years, the cardinal principle of which seems to be that human mentality is no longer to be viewed, as it were, "in the lump," but that each individual presents a problem in psychology, for the unravelling of which the services of the medical expert in that branch of science and of the educators and trainers of youth are equally indispensable. The phraseology of Dr. Neuer's paper, while admirable from

the German point of view, does not lend itself easily to English translation ; some of the terms even it was found difficult to express in such a way as to give an adequate idea of their meaning. It may, therefore, be of assistance in the comprehension of the aims of the Society, and the purport of the work reviewed, if we give in addition a foreword, or explanatory notice, by Dr. Carl Furtmüller, one of the leading lights in the new movement.

We may add that the Society has started a journal for the dissemination of its views, of which a copy of the first number has reached us (*Zeitschrift für Individual-Psychologie ; Studien aus dem Gebiete der Psychotherapie, Psychologie und Pädagogik.*) This includes an introduction by Dr. Carl Furtmüller, and various articles, amongst which may be mentioned the following : " Is Individual-Psychology possible as a Science ? " by Dr. Alex. Neuer ; " The Problem of ' Distance,' " by Dr. Alfred Adler ; " On the Utilisation of Dream Interpretation," by Dr. E. Wexberg, Vienna ; " A Psychological Analysis," by Robert Freschl, Vienna ; with some short reviews of books and reports of meetings of the Society. As is not unusual in the case of new intellectual movements, or new aspects of older forms of thought, a special terminology, or highly technical meanings of ordinary terms (of which the word " Distance," as mentioned above, may be cited), is being gradually evolved, which will throw an additional burden on the already over-taxed memory of the present up-to-date psychologist.]

The object of the above volume (*Heilen und Bilden*) is to give a picture of the activities of a working society of physicians and teachers which was formed a few years ago. The object of our publication is to win for our endeavours not only readers and spectators, but active fellow-workers. So, in the first place, it may be stated—so far as this may be done without forestalling the works that are to follow—what are the fundamental principles which guide us in our work, and what appears to us, in this mutual co-operation of physician and educator, to be novel and characteristic.

For that the advice and information of the physician are indispensable to the educator, that, moreover, it is incumbent on every physician to develop, in a certain sense, educational



activities, is not in need of discovery ; and the work of the psychotherapist, in particular, with full consciousness in some cases, in others more or less unconsciously, is, in its most essential aspect, ever and always in an educational direction. But a co-operative movement, such as is now going on before our eyes, only for the first time became possible when the method of Individual-psychology reached its development in psychotherapy.

If we may logically separate things which in reality run together in close union, the task of the nerve specialist falls into two parts—a practical and a theoretical. He must, in the first place, try to understand the soul-life of his patients in its deepest recesses, while he lays bare the hidden aim towards which all the actions and psychical deliverances of the patient are unconsciously directed. So will the ideal personality emerge in ever clearer outlines before his eyes, the realisation of which forms the deepest life interest of the patient, and the guiding lines which determine the paths along which he strives to attain this final aim will become visible. Now must he trace out what in this rigidly determined life plan is wrong and untenable, what it was which necessitated the patient being brought into uncompromising conflict with reality, and which, therefore, forced him along circuitous by-paths, of which those most fraught with serious consequences are revealed in the neuroses and psychoses. For the solution of this theoretical problem he will have to combine the gift of psychological intuition with the exercise of an accomplished individual-psychological technique. The practical part of the work of the psychotherapist will be achieved when he succeeds in inducing his patient to renounce his unrealisable life plan, and in its stead to set up another which will render feasible for him adjustment to reality.

This department of treatment, then, constitutes an especially far-reaching, and, under particularly difficult circumstances, a helpful educational task. And yet the essential element which unites the physicians and educators of our circle is rooted before everything in the region of theory. The psychotherapist who wants to understand the personality of his patient must study the history of this personality. He must, glancing backwards, make it clear to himself how a given bodily disposition, and the psychical reactions arising out of it, such as

its demeanour towards parents and brothers and sisters, towards comrades and teachers, have gradually compelled the child to an even more clearly outstanding and, for the individual, characteristic attitude towards the world, so do the psychotherapist and the educationalist meet in their common interest in the psychology of the child.

But to this material momentum there is added a consideration of perhaps still greater significance. The creation of the individual psychological method only became possible by psychotherapy spreading far beyond the original limits of its sphere of work, in its having laid the foundation of a general individual psychology. If the up till now prevailing psychology has concerned itself preferably with the psychical phenomena which lie on the outskirts of personality, and if it has at most, with fear and trembling, made the attempt to make some small approach to the centre from this, it has done so, then, on the methodical principle that one must first master the real essence of a personality in order to be able to at all understand and correctly estimate its peripheral manifestations. For the scholastic psychologist it will necessarily be a troublesome matter to familiarise himself with this new view, which turns his usual method of working absolutely upside down. But the pedagogue has always been face to face with the personalities of his pupils, has always taken pains not to judge their utterances separately and apart, but to take these in connection with their being in its entirety. Only in so far as he succeeded in doing this could he really individualise. Were he to turn to psychology for advice, he could learn from her an abundance of what was worth knowing ; only, as regards what was for him the chief problem, he could gain nothing ; he was not led into the depths of individual personality. Now we can understand what a joyful confidence, even exultation, must fill the inquirer at the moment when the possibility of a scientific individual psychology meets him. Thus, out of practical needs, there develops in the case of educators, as in the case of psychotherapists, a new theoretical interest which binds them together. Psychology seems to them no longer in the light of an auxiliary science, towards which they stand in a receptive attitude, but they feel themselves called on to fruitfully co-operate with it in the building up and further development of an individual psychology.

In this way the practical requirements of the educationalist do not suffer any damage. Whilst he learns to understand the child better, he also learns how better to appraise the often, in a sort of way, subterranean influence of his educative discipline, all the more in that, by the psycho-therapist's histories of patients and by his own observations, his view becomes extended as to how far, and in what manner, such interference on the part of the educator has after-effects upon the grown-up adult. It will, perhaps, be thought that, in this volume, sufficient stress is not laid on the attitude towards concrete problems of training. But, surely, the countless educational hints and references which are scattered through the book will not escape the attentive reader. But, frankly, whoever expects to find here an educational programme will be disappointed. We are fully aware that we have left this out of consideration, because such general formularisations lead all too easily to the making of schemes. We are content to continue in our psychological work, and we take note of the educational views which thereby fall at our feet like ripe fruit from a tree. But we see that the main advantage which the educator can derive from his taking up individual psychology lies in the fact that it enhances his human interest in the individual pupil, that it urges him to a critical circumspection as regards his own sphere of work, that it sharpens his psychological instinct, and refines his educational tact.

From a casual glance at the table of contents of this volume we learn that it is, to a certain degree, divided into two parts. The first comprises the works of Alfred Adler during the years 1904 to 1913, and so gives a finished picture of the development of the individual psychological method which originated with him. The second shows colleagues of our circle at their work of mastering manifold problems by the aid of individual psychology. We hope, at no very distant date, to come before the public again with a considerably extended circle of fellow-workers. We need hardly lay stress on the fact that we look on the condition of membership as consisting, not in the sharing of our concrete views, but only and solely in the adoption of the standpoint of individual psychology.

(<sup>1</sup>) Published also in *Zeitschrift für angewandte Psychologie und psychologische Sammelforschung*, vol. viii, Nos. 3 and 4, 1914.

*Some Observations on Early Nervous and Mental Cases, with Suggestions as to Possible Improvement in our Methods of dealing with them.*<sup>1</sup> By Dr. A. HELEN BOYLE.

IT is quite likely with regard to the title of this paper that critics may say—

“Why cannot the writer say clearly what she is going to talk about? The words ‘early nervous and mental,’ cover so enormous an area,” or again “Why in any case should we of the Medico-Psychological Association be troubled with the word ‘nervous’; surely that pertains exclusively to the Neurological Society? Why should nerves—inferior spinal things—be mentioned in the august presence of those concerned with the brain?” and yet there is no nerve of interest in the healthy human being which is not interdependent upon, or in close association with a brain. It is inconceivable that any nerve should suffer and leave the brain unaffected, if not from impressions sent up and down, then from absence of impressions, and it is upon this vital essential oneness of the whole nervous system that I wish to lay stress to-day.

Early nervous and mental cases are inseparable in the abstract, and still more inseparable in practice. Any arbitrary artificial separation is unscientific, and productive of mistakes and misunderstandings fatal to their efficient treatment, and still more to their correct scientific appraisal and investigation. Since writing the above, it is interesting to note Dr. Mott’s affirmation in the ‘Archives’ published recently to the effect that locomotor ataxy is pathogenetically the same disease as general paralysis of the insane, a view also held of recent years by others. Would this interesting fact or discovery have been postponed until now if locomotor ataxy had not been labelled nervous and gone to a neurologist, while general paralysis of the insane is labelled mental, and sent off to an asylum with a sort of half-hearted remark that general paralysis of the insane sometimes begins with locomotor symptoms. Does it make for clarity of mind, unity and understanding treatment of a disease, to have this pigeon-holing of the different stages of it? During about nineteen years of work largely concerned with the treatment of mental and nervous cases, at first as an asylum medical officer, then



with patients in my own houses—for nine years at the Lady Chichester Hospital (late Lewes Road) for early nervous and mental cases in the poor, in private practice, and in consultation, I have had a heterogeneous experience of them which is, perhaps, not very common. During this time it has fallen to my lot to see some failures (other people's, of course!), that is to say, to see non-recovery in recoverable cases, as well as failures to cure those which, for the present only perhaps, are regarded as irrecoverable.

I have seen differences of opinion and treatment far wider and more radical than is apparent in other diseases, and the management of such cases undertaken by all and sundry, either with, or more often without, trained experience. It has seemed wonderful that in this, one of the outstanding increasingly important questions of public health, there should be so much chaos of opinion, thought, and practice.

Why is it? The difficulties and reasons fall naturally under two heads.

(1) Those relating to the general treatment and opinions held of neurotic and mental cases altogether.

(2) Those reasons connected with individual and special treatment of definite groups and patients.

To take the former first :

Where and by whom are our early nervous and mental cases treated at present?

First and foremost come—

(1) General practitioners, who see the patients in their own homes, or in nursing homes, and who, in the vast majority of instances, have little, or no real training in their medical course in the subjects of neurology or insanity.

(2) Psycho-therapists, very often unqualified men and women; when qualified, usually with no appreciable asylum or nerve hospital experience.

(3) Hypnotists, of whom the same may be said.

(4) Christian and other Faith Healers, *ibid.*

(5) Christian Scientists, *ibid.*

(6) Psycho-analysts, *ibid.*

(7) Doctors and Nurses in hydropathic establishments, *ibid.*

(8) Electro-therapists, *ibid.*

(9) Occult Magnetic Healers, such as a well-known peer, *ibid.*

(10) Occultists, one of whom claims to have cured a girl by telling her not to wear mauve, *ibid.*

(11) Quacks of all descriptions, like a man who made large sums of money in Brighton by the sale of a mixture containing half a grain of Pot. Brom., *ibid.*

(12) Surgeons ; some of these patients have been operated on two or three times for mysterious abdominal symptoms, *ibid.*

(13) Physicians, who not infrequently recommend a sea voyage for an early suicidal melancholic, who returns to trouble them no more, *ibid.*

(14) Neurologists, who usually have no special asylum experience, but who, of course, rescue the nervous cases.

Who is the last to see an early mental case ? In fact, who generally does not see it at all until and unless it has become certifiable ?

The Alienist.

Is this satisfactory ? If not, can it be helped ? I should like to reply "No" to the former and "Very largely" to the latter question.

In casting about for the reasons for this state of things, two have seemed to be immeasurably more responsible than the others.

(a) The separation in teaching and practice between neurology and psychiatry, bridged to a slight extent by the conjoint section of the British Medical Association, and in the practice, I believe, of one or two hospital out-patient departments.

(b) The absence of wards for early nervous and mental cases, and consequent lack of teaching for students and nurses, in the great general hospitals connected with medical schools.

To return for a moment to the instance I gave before of confusion existing with regard to locomotor ataxy and general paralysis of the insane. I had an illustration of this confusion recently in the case of a man who had seen repeatedly a leading neurologist in London, who went carefully into the case from his own point of view, diagnosed a nervous complaint, and told the patient's wife the diagnosis. I saw the patient shortly afterwards (not professionally, of course) and he is an undoubted case of general paralysis of the insane, with sudden impulses and distinctly dangerous tendencies.

Now the one thing which it was valuable, nay essential, for the wife to know for the protection of herself, her husband, and

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the children, was the mental risk (he had already muddled away a large part of the money), and that she ought never to be without a male attendant, call him butler, valet, as you like.

A nervous disease, truly, but also a mental one. Ought you to have two specialists to attend him, or would it not be more reasonable that all specialists for the nervous system should make themselves thoroughly conversant with the whole nervous system including the brain, not only with part of it?

The symptoms of disordered conduct, of impulsiveness, of vague delusions, were all present.

Again, on the other side, I recall a case of my own, of course! of brain tumour, only discovered at a *post-mortem*, where a more perfect familiarity with neurology, and a less complacent satisfaction in having diagnosed the mental state, would have led to a more just estimate of the condition present.

Recently also a patient was sent to me whose mental symptoms had led to a diagnosis of hysteria (a popular euphemism in and outside the profession for early mental cases—indeed sometimes for a late mental case), and an overlooking of a true spinal injury and illness in a girl who had slipped and sat down suddenly on the pavement with consequent concussion, and probably a fracture of one of the last vertebræ. The treatment of these two conditions is, of course, widely different.

Again, think of the innumerable cases of early mental disease, wrongly ticketed nervous, and sent to undergo Weir-Mitchell treatment, even when, as in one case I knew, the woman weighed over 10 stone. Isolated—bored to tears—with nothing to distract them—their minds feed on themselves, like the camel on his hump, and when the hump is blue, and composed of incipient and unwholesome delusions, the result of this cannibalistic diet is far from successful, and ought not to be surprising. Patients are treated too much in bits nowadays, and in no instance is this more glaringly true than where one system is split in pieces.

Another reason for deprecating this divorce between psychiatry and neurology is, that it confuses the public mind.

The public, and even the medical and nursing professions, will never get a true estimate of insanity, and its relation to life and disease, until its bearings towards, and connection with, other nervous troubles are recognised, and admitted by neurologists

and alienists so far that they become one and the same. If all neurologists were alienists too, and all alienists were also neurologists, in fact, neuro-alienists, we should begin to get a healthier and more intelligent public opinion on these vital matters.

This is more important and urgent because of the position eugenics is occupying in the national mind and conscience.

It is a most interesting subject, but one which can, if handled by the badly informed, be destructive and dangerous. Emboldened by the fact that they can sometimes breed race-horses, where it is exactly known what faculties are required, some people urge that a similar intentional breeding would be valuable for the human race.

But who has ever seen the ideal man? We are utterly ignorant of what qualities he will possess, what type of mind and body, whether bovine or spiritual—in other words, we do not know what to breed for. We do know what we want in horses, we do not know what we want in men.

In any breeding, naturally selective or not, men or beasts, we shall have bye-products—creatures faulty, imperfect, as we have them now. Who knows whether the dead level of monotonous mediocrity to which we might possibly descend would not be worse than what we have? Who can tell that, in ruling out neurotic and insane stocks, we should not also rule out sports of immense value, geniuses which could make us grovel, showing heights of capacity at which we had never guessed? Epilepsy, eccentricity, poor physique, nervous troubles have been in the past by no means absent in some of the greatest men and women.

Nature has produced geniuses from unlikely places before now, and will again. Surely it is very wary we ought to be before we dogmatise, in such darkness as we now are, on this subject.

If insanity in relation to nervous disease were more thoroughly understood, the difficulties of selecting for marriage, or of banning marriage, always assuming that there would be no illegitimate births, would be appreciated as even more stupendous than they appear at present.

Certifiable insanity is probably far from being the most pernicious affection from a eugenic point of view, though popularly regarded as such. An unstable brain may be a good brain, and the hysterical woman and nervous man who



have never been certifiably insane, may produce an even more sickly and feeble array of neurotic children.

And what is insanity? It is a great many things more than certifiable—but the common and medico-legal view held of it, *i.e.*, that all insanity is certifiable, drove me to a paradox which I have often used, that “Insanity begins before a person is insane.”

It is really true to say that insanity, want of mental health, exists before—usually long before—a person becomes certifiably insane—but the present state of the law renders the paradox a safer position.

A patient, about whom I had a conversation with the Commissioners, was a case of Bright's disease which I had just seen for the first time, and sent to a nursing home. She was starting, for an hour or two occasionally, hallucinations undoubtedly due to circulation of matter not properly eliminated by the defective kidneys. The greater part of each twenty-four hours, and sometimes for days together, she was absolutely sane, and said she could not think why she got these fancies, it was also possible that with steam baths, etc., this condition would pass. All the Commissioner would say, indeed all he could say, was “Is she insane, or is she not?” Now it sounds absurd to say that one hour she is, and the next she is not, but it was nevertheless strictly true, and in the early stages of such cases is not uncommon. It is difficult to get such a case certified, because ten to one either the second doctor, the petitioner, or the magistrate interviews her during a sane time, and refuses to be a party to any such high-handed procedure as certification—moreover such cases may clear up entirely with treatment, and are no more suitable for an asylum than the temporary insanity of typhoid or pneumonia. On the other hand, they need supervision and more skill than is usually available at home, and if a nursing home takes them there may be trouble.

To illustrate again the difficulty of separating the cases. Take the case of a man or woman with functional paralysis of a limb or aphonia. These would unhesitatingly be pronounced nervous only—but where is the lesion? Not in the nerves of the limb, not in the motor or sensory parts probably, but in the brain; or if we want to avoid the material side, in the mind or the sub-conscious; or it is a dissociation, as you like. Is it not truly a very localised, very curable mental condition, a de-

lusion or obsession, which in an otherwise well-acting brain can be often rapidly cured. A patient was sent to me some time ago with dysphagia—she had taken nothing solid for seven years, weighed about six stone, and had undergone untold misery with the passage of bougies innumerable at various London Hospitals, she was very depressed, and said life was not worth having. She was told, it was suggested to her, that with pluck she would swallow perfectly, that it was only nervous spasm and would invariably yield, and no choking would result. She started with bread and milk, put on weight, and ate pork with relish before she left. Seven years of waste of time, waste of pain, waste of good work in the mother of a family.

Never will these early nervous and mental cases be efficiently understood until there are wards in the general teaching hospitals for them, and, contrary to what is often supposed, it appears to me to be quite unnecessary to wait for a change in the law. The cases which it seems to me all-important for students to see and study, are not the delirium tremens, the acute mania, the certifiable cases, but rather the early uncertifiable ones, the obsessional, the early melancholic, the hysterical, the neurasthenic, the hypochondriac. The dealing with these cases can never be taught by books, (of which by the way there are hardly any). Less than in any other illnesses can the treatment be academic, or the prognosis and diagnosis be cut and dried, and absorbed from theory. The reaction of temperament, the success of certain nurses with certain cases, the extraordinary unexpected cures that can be wrought by good treatment should be seen personally to be appreciated and understood. It is in this realm that miracles occur.

If efficiently treated by the profession we should hear less of quacks. Until the medical student is as well trained in early nervous and mental work as he now is in surgery, we shall never know how much of the nervous illness of the present day is curable and preventable, even with the knowledge about it that we now have.

In its most curable stage it is in the hands of those who have been taught next to nothing about it. In this connection it is interesting to note that almost all the physical signs that we used to rely upon for the diagnosis of organic nervous disease have now been described as existing in functional cases. Ankle clonus, exaggerated knee jerks, the tongue going out to the

right or the left, facial paresis, and so on may all be seen more or less in functional cases. Slight hemiparesis of the face, and the tongue being protruded in an asymmetrical way is by no means rare. It occurs as far as I have seen mostly in obsessional and early melancholic conditions, where there is vasomotor instability, *tâche cérébrale*, or that urticarial marking on scoring the skin with a point. It has seemed to me that it happens in those cases where there is a power to look on at yourself being foolish without power to stop the foolishness, and I have wondered whether there is not in these cases a real alteration in the circulation in part of one half of the brain, leaving the other in a more or less normal state.

But this brings me to (2), the reasons for the chaos which are connected with individual and special treatment of definite groups and patients, which it is too late to go into now, and which possibly, if you will bear with me, again I may do at some future date.

It may be urged that in these days of minute and prolific knowledge it would be a counsel of perfection, but unattainable for anyone to be thoroughly competent in these two branches. So far it has not been widely attempted, but the cases are so inextricably mixed, that rather, I believe, would it tend to simplify than increase work in the end.

No practitioner can escape these early nervous and mental cases, and neither can the nurses. For their training also it is essential to have them in the hospital. It should be as impossible to turn them out untrained with regard to these as it is now for them to know nothing of asepsis.

The difficulties should not be insuperable, rules would need modification, patients would many of them have to be up, and sent out daily with nurses, the immaculate tidiness, and some of the red tape of the ordinary hospital ward would have to be sacrificed, but why not?

The welding together and co-ordination of the treatment of all forms of nervous and mental disease would compass another valuable end. It would make mental troubles less shameful. It would lead the patient not to fear applying for early treatment. There would be no brand about consulting the hybrid neuro-alienist. To be seen in his or her consulting room would not be a degradation. It would promote healthy public opinion on the whole subject, and a better understanding of the *raison d'être*

of the Lunacy Laws, which in spirit existing only to protect the patient and his liberty, in practice, despite the often humane handling of them by the Commissioners, lead to difficulty in securing the best care for them at times. Insanity would no longer be put into a different category from other illnesses. It would not be regarded with fear and trembling by the ordinary general practitioner. You would not have to pay those dealing with the most interesting of diseases of the most important organ and function of man more than those treating other patients of the hospital class.

There is at present being carried out a huge scheme for the treatment of London's poor mental patients, through the generosity of Dr. Maudsley. The danger to the best success of that scheme is, that unless neurology and psychiatry join hands in that clinic, it will become no better than an asylum for acute certifiable cases, more convenient for students, but very little improvement, if any, upon the excellent acute wards in the county asylums.

No really early mental case will go to it; why should they dub themselves mental, that term of opprobrium? On the other hand, call it an institution for the treatment and cure of brain and nerve disease, take in paralysis, functional cases, hysterics, obsessional cases, chorea, etc., and exclude chronics, equip it with all the methods of treatment known to neurology as well as mental science, hydropathic, electrical, dietetic, Swedish exercises, massage, suggestive therapeutics, and you will get the co-operation of the patients in the early stages, and of their medical advisers at a time when care and prevention are most possible and probable.

To repeat :—Unification is necessary for efficient treatment, scientific study, the education of public opinion, and for resultant legislation, the prevention of quacks, the improvement and inauguration of preventive measures of mental and nervous disease.

#### DISCUSSION.

The PRESIDENT said the paper was the result of observation in what must be acknowledged to be a very difficult field of practice. Members knew how admirably Dr. Boyle had equipped herself for the work which she had undertaken, and she had put her theories to the proof most successfully. Her contribution was consequently specially valuable, and would doubtless elicit an interesting discussion.

Sir GEORGE SAVAGE, in response to the President's invitation to open the discussion, said he felt like an extinct volcano, having been fired off so often, but when the President asked him to say anything he felt that he must. One had to



look at facts. There could be no doubt that the recognition of the early stages of insanity was all important, though not so important as some were inclined to contend. One heard it said, often unjustly, of patients taken in to asylums that if they had been seen six or twelve months earlier they would have been cured. That delay had ruined their prospects of cure. There was a great deal of humbug about talk of that sort, for there were very many cases which, however early they were seen by a medical man, must inevitably go to an asylum, and would not have got well, however early they were located. One should also recognise that the position taken up by the neurologist and the general physician nowadays was, to a great extent, the fault of the past race of alienists, who would only look upon a person as insane who had to be protected against ill-treatment, and whom society had to be protected against. The idea was that all that was required was to see that the patient was well fed, well clothed, and not allowed to commit homicide or suicide. He thought of the day, nearly fifty years ago, when patients were well fed and looked after, and insanity was not treated as a bodily disease. Another failing in connection with the speciality was that many who practised it entered upon the work without having had a preliminary wide general experience of medicine as an ordinary practitioner. He was himself in general practice for four years before entering the speciality. He did, perhaps, nearly every form of operation, and saw four hundred midwifery cases, and he had not regretted it. It was necessary to approach the early stages of mental disorder with a knowledge of the physical side. As Mercier said, one sometimes had to regard insanity as an entity, as insanity from the beginning, while in other cases it might be looked upon as an epi-phenomenon. A good medical and surgical knowledge was undoubtedly an advantage. Thus the insanity associated with myxœdema was not treated as a primary condition, but as a symptom of the myxœdema, and there was need for more knowledge on the insanities associated with toxic conditions. He was sure it was skill and general knowledge which was wanted, and he recognised much in what Dr. Boyle said as pointing in the right direction; the neurologist and the psychologist must work together. There was a prejudice against lunacy, and against what was known as the "mad doctor." The outside world got the idea that if one was a specialist in mental disorder there was only one remedy which one would resort to, and that was to send the patient to an asylum; he had been hearing that for the last thirty years. People said, "It is no use sending him to Savage, he will send him to an asylum." Such people were forgetful of the number of people who were prevented from being sent to asylums by early treatment. He had listened to the paper with great interest.

Dr. PERCY SMITH said he had not the advantage of hearing the whole of Dr. Boyle's paper, but, speaking from a practical point of view, he might say he sent numbers of patients to Dr. Boyle's Hospital for borderland cases at Brighton from the out-patient department at St. Thomas's Hospital. Reference was made in the paper to the absence of beds for early mental cases in general hospitals, and that, of course, was a great administrative difficulty. If mental cases were taken into a general hospital, the governors of such hospital asked in what relation they stood, in regard to such cases, towards the law, and what steps could be taken for the appropriate care of these cases? What nursing did they need? Must their nurses be those who had been trained in special institutions? Demands for beds for special departments were constantly being made in general hospitals, and he thought the mental department was a sort of Cinderella, the last to be provided for. In many of the London general hospitals recently lying-in wards had had to be provided, and there were demands for wards for throat, skin, and ear cases. It was difficult to see how the general hospitals were going to provide more accommodation, but if there were a certain number of beds allotted in a properly equipped ward, with a proper nursing staff, he believed that many cases of early mental disease could be not only treated, but opportunities would be thereby afforded to students to become familiar with mental cases in their early stages. In the absence of such ward provision for these cases in general hospitals, there could be no question that the out-patient department for mental cases in many general hospitals was of great value. He remembered when he was a student at St. Thomas's Hospital that if a mental case came, it was promptly sent off; and if a case in the wards broke down mentally, it was sent to the infirmary as soon as it could be got there. Many years ago, Dr. Rayner started an out-patient department for mental cases at St.

Thomas's Hospital. And when he, the speaker, was on the Charing Cross Hospital staff, he began a similar department, which was now under the care of Dr. Macnamara. He believed there was now a combined mental and neurological department at Guy's Hospital, and at St. Mary's, too, where Dr. Cole was in charge. These were of great value; cases were referred to them from other departments and seen in early stages, and they were at least examined, and their symptoms gone into by some one who was familiar with mental disease. In that way many cases could be put on the right lines for getting well. Many patients had got well after being treated as out-patients upon whom he could look back, but who otherwise would have drifted along in an unsatisfactory state, and then broken down more acutely and sent to an asylum. But, on the other hand, there were cases which, from the first, needed a special hospital or asylum. With regard to the hospital in connection with the County of London, which had been partly built and equipped by Dr. Maudsley's munificence, he did not quite understand what was the position of that institution. If it were to be an institution to which borderland cases could go without the formality of certification, it seemed to him that it would be of the greatest possible value; but if patients going there were required to be certified, he thought it would rather block the way; that it would be another insane institution without the freedom to go there under observation and to receive early treatment, such as one would like to see provided for early cases. And with regard to the early cases, one had to remember not only the early cases which were able to pay, but the poorer patients, who were paid for either by friends or out of the rates. If one sent cases to Dr. Boyle's institution from St. Thomas's Hospital, one had to question whether this patient might be certified: and if it was said the case should have been certified, was prosecution likely to follow? As Dr. Boyle said, these cases might be certified at one time and not at others; and cases might be certified who ought not to be. There were also cases which might get well without having to go through the required red-tape formalities. If there could be a good deal of freedom about the Maudsley Hospital, he believed its establishment would have a very beneficial effect, but if it was to be swathed in red-tape it would probably not be of as much service as had been hoped.

Dr. JAMES STEWART thought that the educational value of a paper such as they had just heard could not well be over-estimated, and in saying that he meant its value not to psychiatrists, but to the general public. One point to which Dr. Boyle referred had occurred to most of those in the speciality, but the public were not aware of it, namely, the fact that a case would often be certifiable one day, and not appear to be so the next day, so that on the latter day it would be almost impossible to get a medical man to certify it. Another matter referred to in the paper was one which presented great difficulty, namely, that there were three different individuals who must see a case before, as a rule, certification could be brought about, though there were exceptions. One doctor might see the patient in such a state that there could be no doubt about the case being certifiable, whereas another doctor, arriving on the scene later, would feel very doubtful about the degree of the mental disturbance. Then there was the necessity of the concurrence of a magistrate. Thus the difficulties in these matters were far greater than the general public had any conception of. Often the safeguards which the public insisted upon were really to the detriment of the patient. That point Dr. Boyle had brought out very successfully. It was interesting to have, in the Association, an opportunity of discussing such a fearless exposure as this paper set out of some weak points connected with our system of certification. But in regard to one or two particular criticisms, he did not think Dr. Boyle really intended them to be quite as severe as the listener might consider them. One of them was the reference to the lack of harmony between the spheres of action of the psychologist and the neurologist. He did not think there was any disharmony between those branches at all, but he considered that an intermediate stage was being passed through at the present time. He could look back upon a fifty years' experience in the medical profession, and he, like Sir George Savage, had the advantage of several years of general practice before taking up the speciality. During his long connection with asylums and "borderland" cases, he had noticed an increasing anxiety on the part of medical men to carefully examine and study every case coming under their cognisance not according to any particular rules, but in a common-sense way, and as far as possible

in accordance with the knowledge which the work in laboratories was constantly furnishing. He hoped for much good from papers such as the one under discussion, in improving the general attitude of the public towards the alienist physician in his work, and in a wider conception of the difficulties under which he worked. Perhaps, in her reply, Dr. Boyle would be able to modify the impression on this point which had been produced on some listeners. Again, the authoress seemed to think that the principal obstacle against obtaining the admission of insane patients into general hospitals was connected with the medical staffs of those hospitals. He believed she was mistaken in that, and that the chief obstacle was an administrative one, and rested with the governors, who feared that the cost of such special wards might be greater than they could afford. His answer, when the point was put to him, was that governors do not apparently mind the cost of lying-in wards, why hesitate about mental wards? The cost would not be greater, and much good would result.

Dr. BEDFORD PIERCE said he felt some hesitation about speaking on the subject of the paper just read, largely on account of its extreme difficulty and perplexity. So little was yet known as to the causes of these early cases of mental disorder, and so little exact knowledge was available as to the treatment of them—the principles of their treatment were at present so ill-defined and inexact—that it was almost impossible to lay down general rules as a guide to treatment. The subject was recently discussed at a meeting of the Northern and Midland Division of the Association. In order that he might have some basis for the debate, he wrote to about thirty general practitioners and consulting physicians, in whom he had considerable confidence, asking for information. One question asked whether, as the law was now administered, there was any serious delay in obtaining effective treatment for early undeveloped cases. The answers were unanimously in the affirmative. Another question—perhaps a leading one—was as to whether any change in the law was desirable. With one exception, all replied saying that some change in the law was required in the interests of early incipient cases. A further question dealt with the difficulties found in providing for the treatment of such cases. But perhaps the most difficult question to answer was—do you find that a considerable number of patients recover satisfactorily under private care when the form of mental disorder appears to be essentially the same as in other cases sent to Hospitals for the Insane under certificates? The answers to this question were very various, and he was surprised to encounter so much difference of opinion on the matter. About two thirds of those who replied said there were a considerable number of such cases, but only mild ones, which recovered. A minority of them emphatically said none recovered without special care, but all had to enter an asylum sooner or later. One doctor, in whose judgment he had considerable confidence, said he did not know of a single case who would not have done better in an institution than under private care. Another physician whose name is well known throughout the North of England, made the cynical remark "It does not matter what you do with them, some get well anyhow." He did not know of any subject which it was more useful to bring before the Association than that which Dr. Boyle had essayed. It was quite clear that our present means of treatment are inadequate, yet he felt that until we knew more about the cause of mental disorders we were unable to prescribe particular methods with confidence.

Dr. NOEL SERGEANT desired to take exception to the use of the word "shame" in connection with certification. He thought that the members of the medical profession, who had the advantage of a scientific training, pandered too much to the sentimentality of the public. It was because of the sentimental outcry of the public against the real and the supposed ill-treatment of the insane that they had the Lunacy Commission and the Lunacy Act of 1890. These safeguarded the certified patient to a very marked degree. But now the sentimental tendency of the day was not to take fuller advantage of the Commission and the Act, but to evade them or change them. This tendency should be checked rather than encouraged by the medical profession. From the point of view of the public the more the mentally ill were certified the better for them, because when a patient was certified he was protected in all manner of ways. Without certification he had not that protection. It was said that the patient who was certified lost certain civil rights. But frequently it was necessary for him to lose these civil rights in order to get well. If he was not separated from civil rights, responsibilities and worries he frequently did not get well. The alienist found that mental patients



were brought to him not for certification, but for the avoidance of certification. The public should be educated out of this habit. Instead of trying to find ways in which mental patients could avoid certification, medical men should advise their being certified as early as possible. From the other side much might be done to make more pleasant and normal the lot of the milder certified patients. The authorities might be less insistent on hard and fast rules and regulations, and more encouraging towards all that made for the comfort, happiness, and freedom of certified patients of the milder type, even at the expense of some added risks in the way of escape and consequent annoyance. This would help the public to realise that the asylum was a haven or home rather than a prison.

Dr. HYSLOP said that in connection with cases on the borderline there had always been difficulty, and there always would be. In the far north they looked upon the borderline between insanity and sanity as a geographical one, situated at the banks of the Tweed. He, of course, did not conform to that view, but in practice it was almost impossible to make a sharp line of definition between what ought properly to come under the ruling of the Commissioners to be certified, and in regard to what cases it was advisable, in the interests of the patient, that some risks should be run. Such difficulty would always exist in institutions not under the regulations of the Lunacy Acts. At the present time one would always be confronted with the question as to what legal right one had to feed a certain patient artificially without rendering oneself liable to an action for trespass. Next came the question as to suicidal tendencies; how far was one prepared, and how far was one allowed by the present law and the ruling of the Commissioners, to undertake a certain amount of risk? Those were two of the greatest difficulties in this connection. There was also the risk, in connection with this subject, of the psychiatrist and the neurologist criticising one another adversely. Psychiatrists should work in conjunction with neurologists, because they knew things about mental cases which psychiatrists did not, as indeed how should they when they had not the same kind of experience? Conversely, the psychiatrist knew things about the mind which the neurologist did not. It was desirable that those two specialities should work in harmony. There would be more heads at work in attempting to solve some of the problems. One great difficulty ahead was to meet the ruling of the Commissioners. It was well known that during the passage of the Mental Deficiency Bill through Parliament there was great doubt and difficulty as to working within the provisions, and those who were in the majority did not at any time feel safe, and it was only through the instrumentality of this Association that certain clauses were removed, and the Government could proceed with the Bill.

Dr. HAYES NEWINGTON said that while listening to Dr. Helen Boyle's paper he felt that one difficulty was to get a grasp of the subject as a whole and give an organised answer to the question propounded. One advantage of the paper, however, was that it led one on to talk of general, more or less consequential, topics. And when he heard Dr. Bedford Pierce repeat the remark of his cynical friend, that people got well whatever one did for them, he wondered what was in the mind of the public when there was talk about the essential treatment of insanity. He believed the idea in many people's minds was that insanity was chiefly cured by scientific observations and the administration of various medicines, etc. But how did mental cases get well? What was the first remedial step? Was it not to remove the patients from the surroundings and the conditions which had damaged them? It was all very well to talk about adopting restorative treatment. This change of environment was a factor which could not be put down on paper; one could not put a sign in front of it to lift it into scientific prominence, and for that reason it was not sufficiently valued. It was the explanation of much of what Dr. Bedford Pierce meant when he quoted his friend; they got well in asylums largely because they had been removed thence out of pernicious circumstances. One might almost lay it down that the first duty in treating these patients was to put them into good mental sanitary conditions; just as in the case of ordinary hospital patients, the first necessity was to disinfect every possible wound and means of entrance of noxious influences, so as to permit of healing. The question whether mental cases should be treated in asylums, in homes, in single care, or in ordinary houses, was the difficulty, and it was one which the public were not in a position to gauge. Consultants often enough found it difficult to make up their minds as to the best method for removing patients from their surroundings.



Dr. CORNER said he was very much interested in what Dr. Percy Smith said about the need for protection in running the borderland hospitals such as the paper advocated. He had taken a great deal of interest in this matter, having run a home for borderland cases, and he had often felt himself to be in a very difficult position. All would agree that there was need for early treatment of mental cases, and it must be on hospital lines. Some degree of detention should be available which the existing law did not provide for. When the Mental Deficiency Bill was going to be introduced a second time, he suggested to the authorities that under the original Bill all the cases received into institutions for treatment had to be certified. Everybody wanted cases to be under proper care. If they had to be certified it meant that the higher grade cases, which were most difficult to look after, would be scattered about the country, and not under proper supervision. That was recognised by the authorities. He also suggested that the best way to meet that difficulty was, that those homes should be specially recognised by law, that they should be inspected, and that they should notify their cases, and in that way receive some protection, while the inspection was a guarantee of efficiency. He advocated the inclusion in the Bill of Approved Homes. That was accepted. He believed Approved Homes would be of immense value in the future, particularly for borderland cases, who would take their position in the outside world afterwards; they should not definitely be called defective until they had had a fair chance and trial. It was also a protection to the proprietor of such institution. In treating borderland cases one was between two stools. There was a case which was threatening to break down; if that case were not certified soon enough the law might be broken; it was certifiable, and neglect to certify might result in an action at law. If the case was certified too soon, then also there was liable to be an action at law. When he suggested that there should be Approved Homes, for the highest grade defectives, he took it upon himself, at the same time, to suggest that the Mental Deficiency Bill was not only to take the place of the Idiots Act, but also to amend the Lunacy Bill. His suggestion was that borderline cases should be treated in approved homes, which should be registered and inspected, and the cases notified to the authorities. He was sure the gentlemen who ran the institutions for borderline cases would be only too glad to be recognised by law, and it would be a great protection to them for the future. The same might apply to the general hospital which was spoken of by Dr. Percy Smith. If such hospitals were going to be practically asylums and all the cases had to be certified, it would not fill the want intended. Provision for treatment of cases which were threatening a mental breakdown would supply a definite want, but, unfortunately, the lunacy law did not provide for cases which were going to break down. His suggestion as to approved borderland hospitals would probably provide what was needed. A part of the hospital should be set apart for the treatment of cases that were certifiable or became certifiable, and the Board should have the power to allow suitable cases to be retained for a time without being certified. The Board could allow some certifiable cases to be admitted into homes under the Mental Deficiency Act, and a similar provision should be inserted in a Lunacy Bill for the treatment of temporary cases, without having them certified as insane.

Dr. CLAUD FOTHERGILL said that, as one in general practice who took cases for care into his own house, he was particularly interested in Dr. Corner's remarks. He felt sure that in many cases it would be a great advantage if early mental cases could be sent to a hospital or farm colony instead of to an asylum. One speaker advocated earlier certification, but his own view was that in many cases of threatened breakdown, among both poor and rich, the very idea of being certified drove them straightway into lunacy. In the case of the well-to-do, perhaps, the danger was not so great, because they could afford residence in homes. Dr. Boyle also referred to nurses, and it seemed to him that the majority of nurses were not taught how to look after borderline cases, and he preferred the ordinary nurse to the asylum-trained nurse for this purpose. He did not think the medical student was taught properly how to treat early nervous and mental cases, and had to learn it by experience afterwards. He thought that many borderland cases could be saved from the asylum if hospitals were available for them, and this particularly applied to the poor.

Dr. STREET said he appreciated Dr. Helen Boyle's paper, which would do much good. She had dealt with a subject of great importance. He quite expected the

discussion to lead on to the question of certification, which was the crux of the whole matter. Much had been said about certification which he could not accept. He had had many patients under his care who had recovered without knowing they had been certified. And he did not see why they should know. Much humbug was talked about certification. Some patients on the borderline should be certified, and other lunatics need not necessarily be certified. Both required treatment and care, and the difficulty was to ensure it without certification.

Dr. WOLSELEY-LEWIS thought the discussion had disclosed great unanimity of opinion in favour of some alteration in the law with regard to the certification of patients. As one speaker said, the present lunacy law was made for the benefit of the lunatic—to protect him. Certainly at public asylums patients were received who might have been very much better treated outside asylums. At the present time, however, it was impossible to treat them outside an asylum unless there was some intermediate method of notifying to a public authority, or some controlling body. He thought there should be some such intermediate course, that the law should be so altered as to permit of notification without certification. The only difficulty, probably, about introducing such a law would be public opinion. They would say that the intention was to take control of these people without giving them the benefits of certification, and that this would infringe the liberty of the subject. But it seemed to him that if patients were notified for a certain prescribed length of time, they might still come under the cognisance of the Board of Control, and might still have all their interests protected, in very much the same way as now. He would like to allude to one other point in Dr. Boyle's witty paper, namely, having mental cases in general hospitals because it would afford an opportunity for students to learn something about mental diseases. To him it seemed that the difficulty was to get at students at all on this subject, for they had their time so fully occupied, owing to the length of the curriculum, and it would be impossible to crowd into five years more than was being done at present.

Dr. W. R. DAWSON said it had not been his intention to participate in this discussion, but he felt he would like to add his opinion to that of the previous speakers concerning the greatly exaggerated ideas which prevailed as to the effect on the patients of certification. Having been engaged in practice among patients of the better class, he had had every opportunity of knowing whether patients were adversely affected by being certified. He had tried to recall a case of a patient being really unfavourably affected by certification, but had been unable to recollect a single one. The relatives were a good deal more upset by the fact than were the patients. A speaker had dwelt on the superiority of ordinary hospital nurses over asylum-trained nurses for outside cases. From that view he absolutely dissented, and he thought most of those present would do the same. The point of view which prevailed among some hospital nurses in regard to insanity was very well illustrated by a nurse whom he had engaged from a nursing home, who considered herself specially suitable for a case of the kind, because she had been having a course of lessons in ju jitsu! He had been much interested in Dr. Boyle's paper, and he found himself to be so much in agreement with it that it was difficult to find points to criticise. In fact, the only cause for the possible anger which Dr. Boyle had alluded to, was that she had adopted so many of his own ideas, including the view as to the advantage to be derived mutually from a reunion of neurology and psychiatry. As would be quite obvious, the question presented very considerable difficulties. But, as far as he could see, it was easier for the alienist to acquire neurological knowledge than it was for those who had started as neurologists to become usefully acquainted with the treatment of insanity, because insanity was still an essentially clinical subject, and was not one which could be learned out of books. For the acquisition of a working knowledge of it, one must live in an institution with insane patients, or at all events be thrown into contact with them in numbers for a considerable time, before one could hope successfully to treat insanity. Hence, also, the short course on mental diseases which had been prescribed in the medical curriculum could not be expected to give the student more than a mere bowing acquaintance with the subject. All that such a course could do was to inform the medical student that a certain person was insane, and that therefore the time had arrived when a specialist must be called in. He did not say the end aimed at in the paper was impossible, and it would be an

excellent thing if every man who thought of specialising in neurology should have a year or two in an asylum to start with, and then there would be some chance of his possessing a working knowledge of psychiatry in addition to neurology. There were many other points which might be touched on, but, as Dr. Bedford Pierce had so well said, it was easier to talk than to talk sensibly on this subject.

Dr. MAURICE CRAIG said that at the present time, the tendency among the laity was to consider that the successful treatment of mental disorder did not involve necessarily any special training, and that anyone could treat such cases. Hence, people with no special study or training claimed to treat them. He agreed that some cases got well, whatever was done, but it was necessary to be able to distinguish these cases from the first. The importance of the kind of hospital now being advocated was, that it was for cases which were not certifiable. In the out-patient department of a big London hospital, one saw many cases who could not be certified, and it would be improper to do so, and yet one knew they were going downhill; and as they became worse, they would pass, from sheer exhaustion, into a condition of profound mental disorder. Mental disturbance was comparable to physical disease, yet there was only one hospital for the poor patients suffering from the early symptoms of mental disorder, and hence the demand to get cases into the "Lady Chichester" Hospital. That, he considered to be a disgrace to the country, and it was this point that he understood Dr. Boyle to be trying to point out. It should be realised that mental disorder was now so far understood, that cases due to nerve exhaustion could be differentiated out, and treated in hospitals; for example, cases due to intestinal or oral sepsis. There was no reason why such cases should not be treated in hospital, and as the cause of the mischief on the physical side was removed, so the mental disturbance would diminish. Attempts should be made to get these cases well without certification. No good purpose was served by blaming the Board of Control, for these gentlemen had to keep the law, which they did not make. The Board of Control were as fully alive as we are to the difficulties. Legislation must come. The liberty of the subject was still the all important factor in the eyes of the lawyer; whereas we who work under the present law appreciate that the liberty of the individual who wishes to have treatment is limited by the law. The problem was not a question of medicine. In this country we were ruled by lawyers, just as in Continental countries the military element loomed large. There was an impression in legal circles that the psychiatric branch of medicine wished to interfere with the liberty of the subject; but as a matter of fact, it was the lawyers who were doing this. There were a large number of mental cases requiring treatment, and legal obstacles prevented their getting it. The public must be taught to realise that hospitals for these cases during the early and recoverable stages of the disorder were required, and in this way, much chronic mental disease could be prevented. Recognition of this fact alone would go a long way towards solving the problem, for the public would then soon demand increased facilities for early and proper treatment.

Dr. J. FRANCIS DIXON (Humberstone, Leicester) desired to identify himself with everything which Dr. Craig had just said. The question largely resolved itself into one of legislation and the law. Insanity seemed to be the one disease in which it was necessary to commit a technical assault in order to bring about a cure, and it was for this reason that practitioners had to receive legal protection. Perhaps something in the direction now advocated could be done by county and borough asylums if legislation were passed which permitted them to accept and treat voluntary boarders, as was now done in registered hospitals. The following incident occurred to him not long ago: A man came and told him that his wife had got into a bad state of health—very low, suffering from headaches, and unable to carry on her household affairs, so that she was compelled to go away and stay with relatives. This lady had sent her husband to him (Dr. Dixon) about her case because she had an acquaintance who had been treated in a mental hospital and had got quite well. She wondered if she could avail herself of similar treatment. The husband was told that she could not gain admission to a mental hospital unless under certificate, but he said he would bring her up to see him. He found her to be suffering from a form of neurasthenia with anæmia, and in a generally "run-down" state. Obviously she was in need of a long open-air rest cure, but this her husband was unable to afford. He showed her the verandahs, etc., and said three or four months there would probably cure her. Her reply was



that she would manage to get certified and come for the treatment, as at present life was not worth living. She went to a practitioner, told him all her troubles, and said that she was thinking of doing away with herself. In the result she was certified and came to him for treatment. She had been a chronic invalid for several years, but though she had now been under treatment only two months, she already seemed a different woman.

Dr. HAYNES remarked that it had been well said there should be some alteration in the law in England concerning lunacy. At present it bore hardly on some mental patients. For instance, he recently had the case of a lady who was run down and in ill-health, but after a month's treatment, under certification, she got well. He kept her another month to get her strong. She was then discharged, and she said it was very hard on her, as she had a family and a husband, a doctor, who was abroad, to have been certified. It certainly was a hard case. It would be well if the English law were like the Scotch, for in Scotland, he believed, a patient could be under treatment for six months as insane without having to be certified. Not long ago he had another case, that of a young lady, who suffered from acute mania and was certified. She soon got well, however, under appropriate treatment and good nursing, and in three months there was very little the matter with her. At the time of the onset her sister was engaged to be married, but it was now doubtful whether the marriage would take place; there was certainly a hitch in the proceedings on account of the certification. Some years ago he had a voluntary boarder who was suffering from acute mania. She ought to have been certified, but was not. The Commissioners knew more about the case than he did. As soon as she came in they wanted a report about her, and he supplied one. They then said they would want another in two days. Then he became aware that she had already been in half a dozen asylums or homes as a voluntary boarder. The Commissioners said she must not be kept longer without certification. He told the friends, and they declared they would not have her certified. He replied that she must be taken away in that case. They took her to Scotland, where, after three or four months, she got well.

The PRESIDENT said that the discussion had been prolonged and he would not detain the meeting. He wished to express his special sympathy with one point which Dr. Boyle had raised, namely, that concerning the education of the medical student. He had no doubt that if the so-called early mental and nervous cases could be treated in the wards of general hospitals, very far-reaching beneficial results would accrue. He thought that then clinical teachers would, by devoting a due proportion of their time to these cases, give instruction to medical students which the latter did not now receive, and which would be of great value to them, and to the community, during their professional career. In calling on Dr. Boyle to reply, he wished to convey to her the thanks of the Association for her paper.

Dr. HELEN BOYLE, in reply, said she was glad there had been a long discussion on the subject of her paper. It was now too late for her to reply to all the individual points raised by speakers, but she would remark, in a general way, that the discussion illustrated again exactly what she had found before, that people did not realise what kind of cases she really wanted to have treated in hospital; it was not the certifiable cases which lacked treatment in the way she had described; indeed, those cases were already very well treated, and, in her opinion, they were certified soon enough. She was dealing with the cases which were not certified nor certifiable. Nearly every speaker had mentioned the question of the law, but long before there came about any alteration in the law these cases could be treated in an ordinary hospital, because they were not certifiable cases. She wanted hospital wards for the early nervous and mental uncertifiable cases, cases which at present were not being adequately treated; they were given a bottle of medicine, there was no systematic or continuous treatment, and hence some of them drifted into being incurable nervous cases, some into incurable insanity. In regard to those cases there was no need for collision with the law. Several times she had asked individual commissioners to come and see the Hospital at Brighton, but they had not yet done so. She did not take in suicidal cases, if she knew them to be so, and the cases in the "Lady Chichester" Hospital could fairly and safely be seen by any commissioner. She was able to say that there were hundreds and thousands of such cases all over the country willing and anxious to come in; often applicants had to be kept waiting three months, and of such, when they did come, they had then to try



and call the treatment "early," which was absurd. There was another failure to grasp what she was aiming at in the paper. Dr. Hyslop said that psychiatrists must not sling stones at neurologists, nor *vice-versâ*. She did not want to do that, but wanted the two departments to be so close together that they should be identical. All psychiatrists ought to be neurologists, and the neurologist ought also to be an alienist. Until they were all neuro-alienists the cases she had described would not be efficiently treated. Most of the speakers gave attention to the borderland cases which were certifiable and which required incipient care. They were not nearly so numerous a class, and hence were not so important. She was speaking of the extraordinary number of early nervous and mental cases which were not certifiable, cases which were avoided by the general practitioner who had had no training in mental cases, and avoided by the general hospital, which would not take them into the wards. She expressed, in conclusion, her lively gratitude for the interesting discussion.

(<sup>1</sup>) A paper read at the Quarterly Meeting, held in London, May 19th, 1914.

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*Epilepsy; A Theory of Causation Founded Upon the Clinical Manifestations and the Therapeutic and Pathological Data.*(<sup>1</sup>) By J. J. M. SHAW, M.A., M.D.

*The Manifestations of Epilepsy.*

IN striking contrast to the elucidation of the cause and progress of various diseases by modern methods of examination, the phenomena of epilepsy, although long and widely studied, remain, to a very large extent, obscure. In recent years, however, some definite although dissociated facts have become known, and abiding views formed, from therapeutic and pathological data, and, within the last few years, from the investigation of the heredity of those afflicted. Although these facts may be comparatively few in number, it is surprising that no attempt is made even in the most recent text-book, to correlate such facts as are known and accepted, and to formulate a comprehensive theory which could be tested by experiment and further and independent observation.

The observed and verified features of the disease which require correlation are these :

The convulsive seizure, or "*grand mal*."

The minor attack, or "*petit mal*."

The occurrence in many cases of a warning, mental or sensory in character, of an impending convulsive attack, termed the aura ; also the so-called "psychical" epileptic state of emotional instability and erratic conduct.

The post convulsive states of stupor, sleep, or excitement.

The production of the epileptic phenomena and habit by trauma, gross cerebral lesion, and cardio-vascular degeneration (senile epilepsy).

The regular incidence of fits in many cases, especially during certain stages of sleep, and the occurrence in some cases of a fit at the inception of sleep, the pre-dormital fit.

The strong hereditary factor in the disease, and its relation to various types of insanity.

The changes of a structural and biochemical type found after death in the cells of the cerebral cortex, and in the lymph spaces and capillaries.

The abnormalities of epileptic blood in regard to alkalinity, agglutinability, coagulability, and the formed elements.

The changes in relation to the convulsive state in the urine, especially its content of uric acid and phosphates, and the occurrence of post paroxysmal albuminuria and mucinuria.

The effects of various therapeutic substances, in particular the bromides and alkalies.

The benefits derived from the restriction of certain forms of food, and especially the purin bodies.

### *The Convulsive Seizure.*

It is generally acknowledged that this state is produced by a sudden excitation and discharge of the cortical neurons.

"The function of the nervous system, and especially of the cortex of the brain, depends on a capacity for the instant release of nerve energy" (1). The regulation of the release of the energy is dependent upon an extremely delicate intermolecular action and transfer of the products of metabolism in true solution and in gaseous form between the cortical cells and the fine capillaries through the perivascular lymph spaces. The epileptic convulsion corresponds closely to the change produced experimentally by local mechanical stimulation, or by a sudden cerebral anæmia caused by obstruction of the flow of blood to the cerebral vessels, or by stasis or clotting of the blood in the capillaries and small veins. By occlusion of the carotid and vertebral arteries in a rabbit, Astley Cooper at once caused spasm, and the cessation of respiration (2).

Kussmaul and Tenner tied the left subclavian and innominate

arteries of a rabbit. "The immediate symptoms were loss of consciousness and voluntary movement. These were followed in ten to forty-five seconds by clonic spasms beginning in the neck ; then occurred dilatation of the pupils, respiratory gasps at longer and longer intervals, and finally cessation of respiration. After complete occlusion of these arteries for not longer than two to three minutes, the brain, on the ligatures being loosened, showed the power of complete recovery. The sudden re-entry of blood stopped the spasms, and in no case did it cause them" (3). Hill has produced clonic spasms in himself by compression of one carotid artery, and states that on sudden compression of both common carotids in man the pupils widen, respiration deepens, dizziness and loss of consciousness follow, and epileptiform spasms frequently occur (4).

A similar result follows the sudden cessation of the flow of blood due to local causes. The production of embolism by the injection of foreign bodies almost immediately causes cessation of the respiration, and rise of arterial pressure. Most important of all with reference to the *post-mortem* findings of Mott and Turner, to be later described, are the results of injection into the circulating blood of a quantity of thrombin solution (thrombin is a nucleo-proteid, according to Pekelharing and Huiskamp) (5) of leucocytes (which contain a large quantity of nucleo-proteid) and of tissue fibrinogen (6) (impure nucleo-proteid) all of which produce intravascular clotting ; and also the experiments of Halliburton and Brodie (7). These last observers prepared a solution of nucleo-proteid of animal tissues such as the thyroid, thymus, and brain, by solution in 2 *per cent.* sodium carbonate and distilled water. The injection of this solution into rabbits produced extensive and sudden intravascular clotting, and death when large injections were made.

"Respiration suddenly ceases, the animal makes a few stretching movements, and dies ; there is no dyspnoea. Sometimes, after ceasing to breathe for about a minute, the animal gives a few breaths more, and sometimes resumes breathing normally." When a weak solution was injected in large amount salivation and muscular spasm were produced, the respiration ceased, and death ensued. An interesting idiosyncrasy towards the injection was evinced by Albino rabbits, in which even a very large amount of nucleo-proteid had no

effect. The stoppage of respiration was due to the respiratory centres, section of the vagi having no result.

### *The Minor Attack.*

In different individuals these attacks may vary from a slight and fleeting giddiness, which may pass unnoticed by the patient and his associates for a considerable time, to the more severe forms in which there is almost complete unconsciousness attended by slight muscular twitchings, by falling or some unusual or inexplicable action such as running forward suddenly and slowly raising the arms. It may be accepted that such phenomena differ only in degree from the major attacks in which a larger cortical area is involved.

Attacks of "petit mal" affecting the special senses are not uncommon, especially visual impressions, and these are referable to the corresponding tracts of the cortex in the same way as the purely psychical.

### *The Aura and "Psychical Equivalents."*

Closely allied to the minor attacks are the sensory, motor, or psychical prodromata of the convulsion called the aura. They are in many cases a precisely similar manifestation, as was indicated by Herpin in 1857 (8), to the minor attacks, which may be considered as aborted or unspread seizures. A different train of symptoms is observable in some cases, and one patient in Bexley asylum at the time of his admission twelve years ago, when he had very infrequent fits, would inform the attendants of a slight feeling of *malaise* almost a month before an attack. This sensation gradually developed into a headache as the day approached on which the fit was about to occur, and quarter of an hour before the convulsion actually took place he would leave his work in the ward kitchen and carefully lie down on a couch, loosening his necktie and collar. With an increase in the number of attacks and growing dementia, he has lost the ability to forecast his fits with any degree of accuracy.

Another patient feels a pain at the vertex for several days before an attack, and, as his fits are almost entirely related to the inception of sleep, he sits up in bed for many hours to apply



the sensory stimulus which grasping one arm tightly by the other hand produces. A strong hypnotic (Chloral hydrat. gr. xx., pot. bromid. gr. xxx, in one dose) which the patient frequently asks for, is often efficacious in producing sleep without the occurrence of a seizure.

I believe that many of the familiar epileptic traits of impulsiveness, violence, and vicious actions may have a physical explanation in the loss of sense of well-being, and so are in reality the outcome of an "irritability of weakness" in patients who do not recognise in them the long drawn out warning of a convulsion.

#### *The Post Paroxysmal States.*

In several cases I have produced a marked abbreviation of the post convulsive state by the exhibition of ammonium oxalate and oxalic acid in very small doses, which I shall later describe.

#### *Traumatic Epilepsy.*

Following severe injury to the cortex, and in some rare cases cranial injury without gross brain lesion, convulsions may occur which bear an exact resemblance to the so-called idiopathic type. In many such cases a slight focal softening is present which affects the nutrition of the surrounding areas by derangement of the fine capillary network. In the same way a tumour will cause local vascular change in addition to a general increase of pressure. "The growth of a tumour within the cranium may produce compression of the cerebral capillaries. The cranial contents cannot be increased and if the quantitative ratio of cell tissue to blood vessels be altered it must be at the expense of the blood volume" (9). Senile thickening and irregularity of the vessel walls similarly tend to impair the uniformity of the blood-supply from arteries to arterioles, and from arterioles to capillaries, and so magnify the effect of a slight anæmia of postural or cardiac origin.

#### *The Time Incidence of Convulsions.*

Many exhaustive analyses of the incidence of the major and minor attacks have been made by different observers, and these correspond closely when the average of a large series of cases is taken.

*The Hereditary Factor.*

In appendix A will be found the hereditary tables of six cases from the records of Bexley asylum.

*Cerebral Pathology.*

Although many cellular degenerations and local scleroses have been described, there are very few changes in the cortex or basal ganglia which can definitely be delimited as epileptic. Similar changes may be found, on the one hand, in the brain of all patients subject to sudden and recurring seizures, such as general paralysis of the insane, and, on the other, in the subjects of imbecility with which epilepsy is often associated. The vacuolations of the nuclei in the cells of the second cortical layer, which was described by Bevan Lewis (10), and upon which he laid much stress, has been shown to be an inconstant feature in epilepsy, and also to exist in other conditions such as tuberculosis and pneumonia (11).

Disappearance of the intra-nuclear reticulum and its replacement by a fine, irregular, granular deposit has been described by two American observers (12) and confirmed by Turner (13), by whom a large number of important changes have recently been described. Turner considers that this granular change is preceded by an enormous bladder-like distension of the nucleus forming the acute stage. He has found a similar condition in the cortex of a dog after ligature of the cerebral arteries, and holds it as evidence of the occurrence in epilepsy of sudden stasis in the cerebral capillaries.

The deepest layer of the cortex, which shows a yellowish-red appearance on fresh section, indicative of a slightly greater vascularity than that of the strata external to it, is sometimes termed the polymorphic layer. The cells are rich in nucleoproteid, and in this layer, and the small pyramidal layer immediately superjacent, the dendritic processes are believed to be actively amoeboid. The perivascular lymphatic spaces are comparatively large, and the cells are freely bathed in lymph. In a case of organic dementia in Bexley asylum in which the seizure closely simulated those of epilepsy in the nature of the spasm, remission by clonus, extreme cyanosis, and rapid recovery, a narrow, irregular stratum of reddish-yellow and yellow softening was found *post-mortem*, involving only the

deepest cortical layers, and, to a slight extent, the underlying white matter in small areas. The cortical layers external to the line of Baillarger presented the usual greyish colour. These lesions were found in the right motor and left frontal area.

A similar narrow strip of advanced softening was found in another case with sudden convulsions, but in this brain there were also softenings in the right corpus striatum. The blood-vessels of the cortex, which arise from those of the investing pia mater, run more transversely in the inner than in the outer cortical layers. The lymph spaces are formed chiefly of fine processes of pial membrane, and the usual trabeculæ visible in the other regions are not seen in the cortex.

Sclerosis of the hippocampus major, which is commonly found in epilepsy, has been thoroughly investigated and described at great length. It is not now considered as a causative factor (14), and Turner attributes it to occlusion of the nutrient vessels.

Mott has demonstrated micro-chemically that biochemical changes occur in the cortical neurons at temperatures of 105° F. and 106° F., and also after epileptic fits, even without pyrexia. He states that the observed changes are due not to exhaustion, but to an altered chemical condition of the lymph in which the cells are bathed (15). He further states that the congestion and stasis of the vessels along with œdema of the brain, inasmuch as it is contained in a closed cavity, must be associated with a corresponding arterio-capillary anæmia (16).

The changes in the pia-arachnoid membrane do not call for detailed description. The most important observations are those of Turner, who has found in the lesser vessels of the membranes changes similar to those in the cortex (17).

There is no marked thickening of the walls of the smaller cortical vessels. The lymphatic perivascular spaces are dilated. Sir James Barr (18) states that the size of the capillaries of the body varies between 7 to 13 micromillimetres. In the cortex, although Ford Robertson gives 4 micros. as the minimum of fineness, Turner states positively that he has found capillaries of from 1 to 2 micros., in passing through which the erythrocytes become elongated (19).

Several observers, including Osler, have shown that blood plates in aggregated masses cannot pass through capillaries. Turner finds many indications that stasis in the smaller vessels

is produced in a great degree in epilepsy, and to this condition, suddenly effected, he attributes the rapid anæmia which results in a convulsion. The general congestion which is recorded by all observers is due to engorgement of the capillaries and small veins, the arterioles being comparatively empty. Associated with the congestion, Turner has observed numerous petechial hæmorrhages scattered throughout the cortex, and small angiomata have been observed (20). Turner attributes the dilatation of the capillaries in status epilepticus to a compensatory rise of blood-pressure to overcome the distal blocking by masses of the formed elements. Spheres composed of agglutinated blood-plates (containing phosphorus and thus indicating their nucleo-proteid origin) are found lying in the capillaries, also hyaline casts due to a complete fusion of the platelets, granulated *débris*, and rarely threads of fibrin.

I have found, and will later describe a tendency in the blood of epileptics to abnormally rapid agglutination, with comparative slowness in the formation of a true retractile clot, and this is in harmony with these *post-mortem* observations.

A condition which Turner emphasises is the presence of a frothy exudate in the sub-pial space, which, he states, also exists in the communicating perivascular spaces. In almost all the cases of general paralysis in which there has not been actual adherence of the membranes to the brain, I have found a similar sticky exudation. It is most commonly found in rapid cases, and in those in whom seizures have been absent or infrequent, and I regard it as the first stage in the adherence of the membranes. Combined with a granular wasted appearance of the summit of the convolutions, I have also observed it in three epileptic brains.

Contradictory observations have been made upon the composition of cerebro-spinal fluid, especially as to the presence of cholin. It may be accepted that there is no pronounced deviation in composition from other congestive seizures and states. Cholesterin is commonly found, and the important observation has been recently made that the carbonates, uric acid, and lactic acid may also be present (21).

#### *The Blood in Epilepsy.*

In recent years the physical and chemical abnormalities of the blood have been the objects of much research. The



conditions which I shall describe at present, like the other matters treated in this section, are intended to take a place in the large series of premises from which a conclusion can later be drawn.

The reaction of healthy blood is very slightly alkaline, and that of the serum, when the alkali protein compounds in the formed elements are eliminated, is practically neutral (22).

The blood corpuscles give up a part of this alkali united with protein to the serum by the action of carbon dioxide, hence the serum becomes more alkaline (23). The addition of carbon dioxide of course decreases the total alkalinity.

The alkalinity changes transitorily after absorption of some foods, and may be altered by the exhibition of acids and alkalis. It presents, however, a regular diurnal variation, being low in the morning, high throughout the day, and falling again in the evening (24). The total reaction may become actually acid in cases of uræmia, diabetes, and cholera (25) (26). In one case of diabetes the amount of acid per kilometre was equivalent to 1.75 grammes of H.Cl. These changes imply a considerable degree of acidity of the serum.

The researches of Charon and Briche (27) upon the reaction of epileptic blood showed that the seizures occurred in inverse relationship to the degree of alkalinity, the minimum frequency of the attacks corresponding to the maximum blood alkalinity, and *vice versa*. The conclusions of Pugh (28) in relation to the final issue of this thesis are of sufficient importance to be quoted in full :

“The average alkalinity of the blood in the interparoxysmal states is lower than the average of the control cases.

“The diminution is gradual and progressive, and is more marked in cases suffering from gastric catarrh and constipation. There is marked sudden and pronounced fall immediately prior to the onset of a fit.

“There is a further fall in alkalinity after the fit is over ; this diminution is seen in from three to ten minutes after the attack.

“This after-diminution depends on the duration and severity of the muscular twitching, and upon the degree of interparoxysmal alkalinity.

“There is a gradual return of the blood to its normal alkalinity, which takes place in five to six hours, the rise being more marked in the first hour.

"If the alkalinity keeps at a low level it may determine the onset of another fit.

"The diminution after the fit is due to the chemical end products of muscular metabolism, *i. e.*, sarcolactic and carbonic acids, and not to substances in direct relation to epilepsy.

"The diminution after the nocturnal fit takes a longer time to return to the normal than the diminution after a day fit."

Pugh finds that the administration of bromide salts at first raises the alkalinity, but this is not maintained even with increased dosage, thus indicating that the bromides must have another means of controlling the convulsive states than by merely affecting the alkalinity.

The metabolism of the tissues depends upon a certain degree of alkalinity of the circulating fluids, and it is essential for the activity of the cortical neurons. As a result of metabolism acid products accumulate, among which are lactic, carbonic and uric acid, and urea. Uric acid is derived from katabolism of nucleo-proteins. It is found along with the purin bases choline and paralactic acid as an extractive body in the normal brain (29).

The viscosity of the blood is dependent upon two factors: the number of the formed elements and the quotient of the carbon dioxide, being high when the corpuscles are increased and when the blood is rich in carbon dioxide (30).

The viscosity increases during narcosis according to the depth of the sleep (31).

The increase in viscosity is a stage in the development of agglutination and coagulability, and viscosity increases in degree according to the reduction in the alkalinity. Dastre and Floresco (32) have found that non-coagulable peptone plasma is alkaline, and that it loses its non-coagulability if rendered neutral or faintly acid. Emerson finds that the alkalinity rapidly diminishes till coagulation is effected, and then it remains almost constant (33).

As an intermediate stage between the highly viscous but still fluid blood and coagulation with the formation of a retractile clot and exudation of serum comes agglutination. The mechanism of agglutination, which is probably of greater importance clinically in the development of stasis and thrombosis than coagulation, has been only partially studied, although its importance was recognised by Hunter in 1873. It may

occur in defibrinated blood and is not dependent on fibrin formation. Addis (34) finds that the first appearance of slight stasis is too rapid and variable a feature in a suspended drop of blood to be taken as a determining point in the estimation of coagulation. Such a stasis, however, would be of the greatest importance in the network of capillaries, especially in the cortex. It is probably due to a simple cohesion of the corpuscles in the presence of the highly viscous blood plates before and during their interaction with prothrombin to form thrombin, which eventually acts upon fibrinogen transforming it into fibrin.

In relation to the discoveries of MacCallum and Voegtlin (35), regarding the calcium content of the blood in experimental tetany, I made preparations to estimate the calcium content of the blood in epileptics by Wright's method (36).

This consists of the estimation in a long and fine capillary tube, of the concentration of ammonium oxalate which permits, and that which inhibits coagulation in a series of dilutions, and so the quantity of calcium in parts per 1000 of blood. After some practice the method worked easily and well, and I obtained uniform results, using my own blood and that of six non-epileptic patients whom I intended to use as controls. In none of these instances was there the slightest difficulty in intermixing the drops of blood with the dilutant on a glass slide, and drawing them up into the long capillary tube. I then proceeded with the same apparatus and solutions to apply the method to my epileptic cases, but was surprised on the first day to find that only five out of the thirty-two dilutions in the four cases would enter the tube, agglutination having taken place almost immediately. On continuing these investigations upon my other cases (*vide* Appendix B), I found the same phenomena in nearly every instance, which rendered the method entirely inapplicable to epileptic blood, so far as the calcium content was concerned, but was extremely interesting as regards the agglutinability. A much deeper stab was required to produce a sufficiency of blood in the epileptic than in the non-epileptic cases, and the flow ceased very quickly, I believe the abnormality to be due partly to an excessive and readily accessible quantum of thrombokinase in the injured tissue cells of the wound, and to a ready disruption of the polymorph leucocytes, and liberation of the thrombokinase

content of the blood plates. I attempted to estimate the comparative times of agglutination in different cases by placing a series of drops on a slide, and taking the earliest time at which a drop could not be drawn into the capillary tube at the point. As the differences were, however, matters of seconds, and depended largely upon the rate of flow from the wound, I could not get reliable or constant results, or estimate the relation to convulsions ; but I attached great importance to the general greatly increased rapidity in agglutination in epileptic compared with non-epileptic blood.

In contrast to this rapid agglutination, I found the formation of a true retractile clot very rare in those specimens of blood, even when mixed with the weakest dilutions of ammonium oxalate, which did enter the tube. A simple sedimentation and cohesion of the corpuscles occurred which on expression into water failed to maintain the thread-like shape of a clot, but broke up in granules, or disseminated in a fine pinkish cloud.

In the presence of the chlorides of sodium, and more strongly of calcium, a true clot with exudation of serum between the thread of clot and the walls of the tube was visible, and this maintained its form when expressed into water, like a clot from normal blood undiluted or in the low dilution of oxalate.

It is highly probable that this rapid agglutination may have vitiated the results of observers who have removed the blood direct from the wound into capillary tubes, and who have found the "coagulation" time unusually rapid in epilepsy ; so far as I am aware, the coagulation time in epilepsy has not been estimated by the recently devised oil-impingement method of Addis. Addis described a similar sedimentation and agglutination in the majority of bacterial diseases, typhoid being a marked exception, and in uræmia, acute nephritis, and cirrhosis of the liver, and quotes the opinion of Flexner that this agglutination may be a source of thrombosis in disease (37).

Turner found a considerably reduced coagulation time in the periods immediately before and after the convulsive attacks, as well as a general reduction in the interparoxysmal periods (38). These results, in view of the relation which has been mentioned between reduced alkalinity and coagulability, are in accord with Pugh's observations upon the reaction of the blood in epilepsy.



*The Cellular Elements.*

No pronounced change has been observed in the number or character of the erythrocytes in epilepsy, but numerous variations in the leucocytes have been recorded. Contradictory statements have been made regarding the total leucocyte count. Lewis Bruce finds a persistent hyperleucocytosis more marked after the paroxysmal periods, when it may rise to 30,000, a result which he attributes to toxæmia (39).

J. Turner states that a considerable leucocytosis is usually present, but has not observed any marked variation in the paroxysmal period (40). McPhail found a leucopenia of 20 *per cent.* below normal, which altered to normal on the administration of the bromides (41).

Pugh (42) has found a constant increase in the leucocyte count after convulsion, the increase being due to the small and, to a less extent, the large hyaline cells. The polymorphonuclear cells are diminished. The degree of leucocytosis is not so marked in status epilepticus, and is diminished with each seizure.

My own observations (Appendix C) conform to those of Pugh in the differential counts, but the total numerical variations before and after seizures were not greatly marked. I also failed to find what could be called a hyperleucocytosis in any case in the interparoxysmal period, the maximum of twenty-eight cases being 15,800, the minimum 7,600, and the average between 10,500 and 11,000.

The blood-changes at the convulsive periods are of great interest, like the hypo-alkalinity, in relation to the hypothesis of cortical endovascular stasis and agglutination.

According to the views of Schmidt and the Dorpat school (43), an abundant destruction of leucocytes, especially polymorph, takes place on coagulation. I have examined on several occasions agglutinated blood by compressing it between cover slips and staining, and also the soft agglutinated masses of corpuscles which form the so-called *post-mortem* clot. In both conditions, although the leucocytes have lost their affinity for basic dyes to some extent, I have found a comparative diminution in the number of polymorph cells. Some investigators believe that there is no actual disintegration of the

polynuclear cells on coagulation, but merely an elimination of their constituents, a process called "plasmoschisis" by Lowit.

The blood-plates, with which I shall deal later as an important nucleo-proteid-containing element, are said to be considerably increased in the blood after convulsions, and have been found in agglutinated masses in the cerebral capillaries (44).

In cases of chlorosis in which the blood plates are increased in number it is said that a special tendency to venous thrombosis exists, and in some of these cases long, cylindrical masses of plates, which probably have been washed from the capillaries, can be found in the film (48).

The gaseous changes in the blood in epilepsy have not been greatly studied, but it has been found (45) that in epileptiform fits, provoked in animals by injection of the essential oil of absinthe, a much greater increase in the carbon dioxide content of the blood takes place in the torcular herophili than in the femoral veins and carotid artery.

### *The Urine.*

Closely allied to the variations in the reaction of the blood are the changes in the uric acid output in the urine. A diminution in the quantity of the uric acid in the urine passed before a convulsion and an increase in the first quantity passed after it, has generally been observed (46) and examinations which I have made confirm this observation. This change is not observable to the same degree after minor attacks. I have also found an almost constant albumosuria in the post paroxysmal urines and a constant mucinuria (*vide* Appendix D).

The presence of toxins in the urine has been the subject of exhaustive researches with contradictory results (47).

The occurrence of albumosuria is of especial interest in relation to the comparative reduction of the polynuclear cells in the post paroxysmal blood.

I have found a slight increase in the phosphate secretion after convulsions (Appendix E).

### *Results of Treatment.*

The medicinal treatment of epilepsy has come to be associated almost entirely with the bromides since their introduction by

Sir Charles Locock in 1857. They have been universally recognised as the most potent group in controlling the convulsive attacks, and in many instances have been accepted as the means of cure in patients who have ceased to have fits after the exhibition of bromides for long periods.

To take the diminution of the actual convulsive attacks as the sole criterion of treatment is, however, becoming increasingly discredited. That bromides may have a depressing effect and may produce serious symptoms in those who require more than a small dose is well recognised. I have found that many patients prefer even a considerable number of fits along with a proper sense of well-being in the intervals to the bromide effects of impaired appetite and lessened mental and physical efficiency; but one must remember that the serious contingencies of convulsions are obviated to a great extent in institutions by appropriate work and play, and by continuous observation of cases who may be injured by a sudden fall. Belladonna, an old remedy, is still used, and digitalis is a useful adjunct to treatment.

The alkalies, especially biborate and carbonate of soda, have been proved to be useful, and I found in several cases great improvement resulting from the latter.

From the exhibition of oxalic acid and ammonium oxalate in  $\frac{1}{2}$ -gr. and grain doses respectively, I have received most gratifying results in certain cases. In several instances I have observed a marked diminution in the number of convulsive attacks and a great diminution in the attacks of *petit mal*. While they are less effective in controlling the major attacks, in the small doses in which I gave them, than the optimum dose of bromide, I believe that they are more effective in diminishing the minor attacks. In some cases I gave oxalic acid gr. j before breakfast, and 10 or 15 gr. of ammonium bromide at bedtime with very good results. But more important than its action upon convulsive attacks has been its effect upon the patient's mental condition and the curtailment of the post-seizural depression and confusion. One case, who had been on bromide almost continuously since his admission (except in the control state in which he had no medicine) twelve years ago, and was regularly known to exhibit a post-seizural phase of stupor followed by restlessness and impulsiveness lasting from one to four hours followed by headache, this

patient after his first fit, four days from the inception of the oxalic treatment, rose about four minutes after the cessation of clonus, walked unaided to the ward from the bath-room, where he was at the time of the fit, and commenced his work in the boot-room. This marked curtailment of the post-paroxysmal state has been evident now without exception for seven weeks.

To avoid obscuration of the central idea of this thesis, I have placed the details of my oxalic treatment and of the other substances which I used in Appendix F.

I will only mention in this place that from the exhibition of the glycerophosphates, including calcium glycerophosphate, phytin liquidum, and Sanatogen, I obtained deleterious effects, both the frequency and the severity of the fits being increased.

I obtained no pronounced effects from the exhibition of emulsion of lecithin or from the calcium salts, but such as were produced were bad. Calcium bromide I consider to be inferior to the other bromide salts in common use.

#### *Dietetic Treatment.*

A salt-free diet, first recommended by Hughlings Jackson, has been widely tried and has been found a useful adjunct to the administration of bromides. A great success has been claimed for it at the Massachusetts Hospital (49). In three out of four cases in which I added 3ij of salt daily to their usual quantum no effect was produced. In the fourth case a marked increase in the number of fits occurred, and he exhibited a marked diuresis, passing on one occasion 130 oz. of urine in twelve hours. This fact is interesting in view of the statement of Straub and Rost (50), that if the increased ingestion of salt be accompanied by diuresis, which is not compensated by drinking water, a rise in the protein metabolism occurs.

Operative interference has not produced good results in many cases. It has recently been recommended by Dr. Alexander who at the Maghull Institution has observed benefit by an operation, the object of which is the drainage of the sub pial space by puncture of the soft membranes and fenestration of the dura mater (51). In these cases he has found an excessive œdema of the pia arachnoid membranes, and excess of sub pial fluid, which is clear, sterile, and of the constitution of dilute lymph.



*Theories of Epilepsy.*

Three propositions which have been advanced to explain the phenomena of the disease, but do not appear to me to come within the category of accepted or proven fact, require mention and elimination. They are :

The microbic origin.

The purely toxic.

The cardio-vascular theory supported especially by Dr. A. E. Russell.

Dr. H. M. Greene of Portland, Oregon (52), states that he has observed the presence of a large diplo-, and small micrococcus in two specimens of the blood of a case of epilepsy following scarlet fever, and also in another idiopathic case without a known toxic or febrile origin. He reports that he managed to prepare a valent vaccine from these bloods, but further observations during twenty years have failed to support his findings.

The presence of an organism which he called the "neurococcus" has also been described by Bra, and discredited by other observers who showed it to be the creation of faulty technique (53).

That a large number of cases date their origin from an attack of scarlet fever has been generally approved (54). Gowers emphasises the fact that the toxins of the disease give rise to chemical changes in the nervous system, as shown by the frequent occurrence of optic neuritis as a sequela. Influenza has a similar but less marked effect in provoking epilepsy. The speculation that deleterious effects may be produced in some cases of scarlet fever in the eliminatory cells of the choroid plexus comparable to the changes in the renal epithelium is instructive, and may account for the morbid changes in the cerebro-spinal fluid in such cases.

Inclusion bodies in the polynuclear leucocytes, of similar appearance and reaction to some which I will later describe, have recently been observed in excess in scarlet fever (55).

A microbic condition is not in accordance with the nature of the disease. It bears no relation to successful although admittedly empirical treatment, and it receives mention but no support in modern literature.

Although various toxic substances, especially cholin (several observers), and carbonic acid (Krainsky), have been ascribed as

the direct cause of convulsions, their actual causative nature has been found experimentally defective, and the strong balance of opinion places them as a resultant and not a provocative change in relation to the paroxysms.

A large mass of evidence has been adduced by Sir A. E. Russell in support of the theory of causation by cardio-vascular insufficiency and, in a much less conclusive way, by arterial spasms in the cerebrum.

He maintains (56) that the difference between faint and epileptic attack is a difference in the degree, and not the kind of cerebral anæmia, and difference in rate of development. "In the ordinary faint the cerebral circulation slowly diminishes *pari passu* with the falling blood pressure. In the fit there is sudden cessation of the circulation. In the faint the circulation slowly improves; in the fit it returns with greater rapidity." Stress is laid on the fact that loss of consciousness may precede convulsions (57). He quotes three cases of Gowers' in which syncopal attacks in childhood have passed into epileptic attacks in adult life, and also three of Moxon's in which epileptiform attacks followed an arrest of the heart's action which he attributed to vagal inhibition. Russell states that the pulse irregularities are great, and the vaso-motor system unstable in epileptics.

While readily accepting the statements that a sudden cerebral anæmia produced by cardiac or vaso-motor change may be the cause of epileptiform attacks, as best shown in the phenomena of the Stokes-Adams syndrome, in which bradycardia and arrhythmia are always present, the evidence that this is the usual, or even a rare, cause of idiopathic epilepsy is wholly insufficient. Even admitting that a vaso-motor or cardiac instability is present in some cases, Russell fails to show, except by analogy with the Stokes-Adams syndrome, where an extreme circulatory disorder obtains, any form of sudden excitant of the attacks.

In the discussion which followed a lecture by Russell on the Pathology of Epilepsy (58), in which he maintained the cardio-vascular theory, the *post-mortem* results of Leser were adduced in opposition to Russell's arguments. Leser found in 500 epileptics that 1½ *per cent.* had signs of heart disease, and in 800 diseased hearts not 1 *per cent.* were epileptic. Aldren Turner (59) has found valvular disease of the heart in 1·8 *per cent.* of his cases.

The results of three observers in a number of cases show that there is no considerable change in the rate of amplitude of the pulse until the clonic state is reached, and no sudden lowering of blood pressure occurs. They agree that the cause must be a local one in the brain rather than a sudden fall in pressure from cardiac inhibition or splanchnic dilatation (60).

The fact that the pulse rate may be slightly reduced, and may occasionally become irregular when satisfactorily felt in the clonic spasm is of little importance if we consider the degree of muscular pressure which is exerted upon the blood vessels during a convulsion. As a rule the frequency and force increase at this stage (61). In examination of the fundus oculi by the direct method from before the commencement of the fit to the end, Gowers has not detected in several cases the slightest change in the size of the vessels (62). This serves to contradict the purely speculative theory of arterial spasm, and, indeed, the presence of vaso-motor nerves in the walls of the cerebral vessels has not yet been conclusively demonstrated (63) (64).

With a view to determining the degree of the alleged vaso-motor instability in epileptics I have made fairly comprehensive observations upon the pulse mobility, the blood pressure, *tache cérébrale*, capillary pulsation, the state of the heart and vessels, and the soundness of sleep in epileptic and non-epileptic cases. (Appendix G). The total result is to show a very slightly greater degree of instability among epileptics, chiefly in the senile cases, but one quite insufficient in my opinion to be a causal factor in the disease. Following a major attack the instability, in company with that of other functions of the body, is naturally greater. The cases which I took were all upon the same dietary, and were in bed for exactly the same number of hours per night. The general state of sleep among epileptics appeared to be deeper than in non-epileptics.

Between the foregoing critical analysis of the conditions which obtain in epilepsy and the second part of this thesis, in which I shall endeavour to substantiate a correlating theory of causation, I will, for the sake of clearness, interpose a brief statement of the conditions which I believe to be responsible for the epileptic manifestations.

The convulsive and minor attacks in epilepsy are produced by a sudden cerebral anæmia due to a stasis of the circulation

in the cerebral capillaries and small veins which is removed at once, or by degrees, by the rise of the blood pressure and increased pulse-rate which occur when stasis has been effected. The actual convulsion may be preceded by an aura due to increasing viscosity, and a rapidly developing stasis of the formed elements of the blood, and may be succeeded by a period of irregular cortical excitation as the agglutinated elements are removed from the fine capillaries, and the cells again become oxygenated. The frequent occurrence of this paroxysmal state is the explanation of the *post-mortem* findings of Turner, Mott, and others. The stasis is produced by a quantitative change in all the nucleo-proteid elements of the cells in epileptics, nucleo-protein forming the largest moiety of the cells of the affected layers of the cortex, of the agglutinating elements of the blood, the blood plates, and of the polymorph leucocytes whose disintegration favours agglutination and coagulation, and which are found to be diminished in number after convulsions. This disintegration is the explanation of the katabolic elements found in the post convulsive urine.

The nucleo-proteins exist in a soluble and precipitated state in the body, and the change in these states, in the circulating media, is dependent upon a minute change in the acidification of their solvent, or upon contact with a foreign body. This change has been demonstrated in the fall in alkalinity prior to a convulsion, and the general incidence of the attacks in relation to the alkalinity of the blood.

The assimilation of nucleo-protein increases the element favouring coagulation in the blood. The assimilation of the components of nucleo-proteid in the purin bodies and the glycerophosphates has a similar effect.

The bromides have a special affinity for nucleo-proteins and retard their metabolism.

#### *Nucleo-protein.*

In all standard classifications the nucleo-proteids are grouped as conjugated proteins along with the gluco- and chromo-proteins (65).

They are compound proteins which are characterised by yielding protein and nucleic acid on cleavage. They are present in large amount in the cells of the body, especially the brain, in



which they are found in greater amount than any other protein (66), and are particularly abundant in the polymorphonuclear leucocytes (67). They are insoluble in water, except in the presence of alkali, and from such a solution which, if concentrated, is slightly viscous, they can be precipitated by weak acetic acid, forming an amorphous white deposit. The degree of alkalinity required is extremely small, and I have found in many cases the change from solution to precipitation in ten cubic centimetres of the fluid to be dependent upon the addition of one minim of 1 *per cent.* acetic acid. A similar proclivity to complete change of physical state by minute change in the reaction of the solvent is exhibited in resolution, especially in freshly prepared solutions.

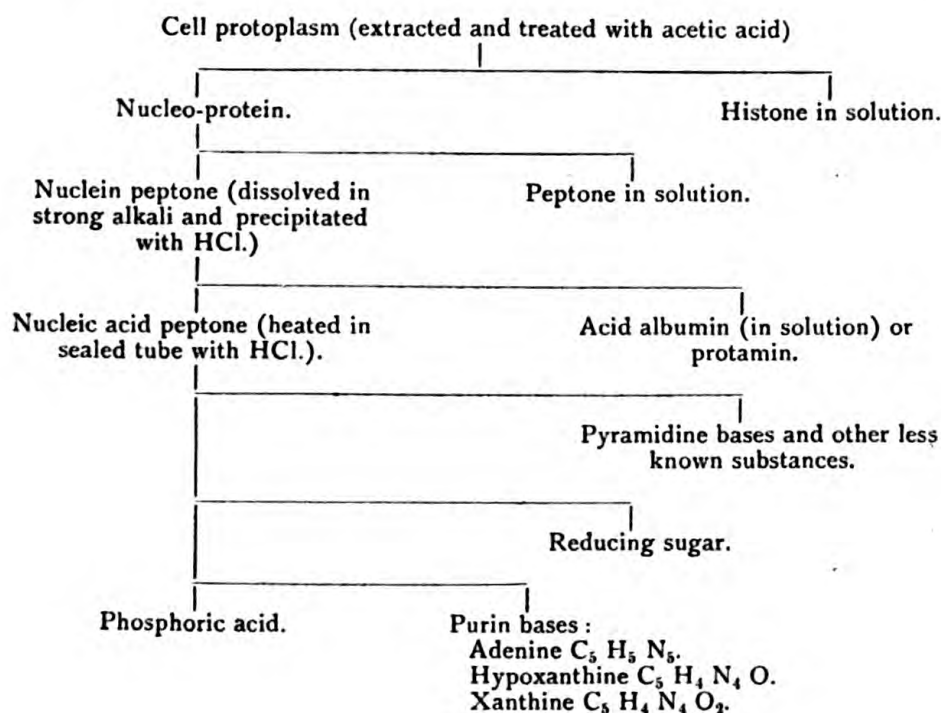
They are resembled by the phospho-proteins in that they contain phosphorus, and have the same properties of solubility, but differ in respect that the nucleo-proteins yield purin bases on cleavage, while the phospho-proteins and lecithalbumins (which are also allied, but differ in solubility) do not. The mucins exhibit a similar solubility, but contain no phosphorus. In the nucleo-proteins the phosphorus is contained in what Kossel (68) calls the "prosthetic" group, or side chain, consisting of nucleic acid, which can be split off from the protein, whereas in phospho-protein a simple salt-like formation obtains between the phosphorus containing moiety and the proteins.

The brain also contains a large number of other phosphorus-containing substances of the cerebroside class, and protagon which Cramer considers to be an integral substance: also the ether-soluble lipoids, of which the chief is lecithin, which also contains phosphorus.

The variations and interactions of these substances are extremely rapid and complicated, and can only be partially reproduced *in vitro*.

As the nucleo-proteins occur in the cells they are in most cases soluble in water or salt solution, which is comparable to the lymph, but after separation they need the presence of a small quantity of free alkali for their solution (69). When freshly prepared from protoplasm they are highly unstable, and undergo changes in repeated precipitations and resolutions.

The disintegration of nucleo-proteins may be carried out *in vitro* as follows (70):



Uric acid ( $C_5 H_4 N_4 O_3$ ) is also a purin, although its exact relation to the other bases and to cellular metabolism has not yet been fully demonstrated. It is probable that part of the basic residue of nucleo-proteins may undergo oxidation in the body and appear in the urine as uric acid, while another part may escape oxidation and appear as the so-called alloxuric bases (71).

A solution of nucleo-proteid can be obtained from many of the tissues, and in considerable quantity from the brain. In Appendix H, I have stated the results of a series of quantitative estimations of nucleo-proteid and other soluble substances from brains of various forms of insanity. The brain substance is finely macerated, and placed in an aqueous solution of sodium carbonate (1.5 *per cent.*) for twenty-four hours. It is then filtered, and the nucleo-protein precipitated by the addition of 1 *per cent.* acetic acid. The supernatant fluid is removed, and the precipitate dissolved in .5 *per cent.* sodium hydroxide. The quantitative results which I have obtained do not show any marked variation in the cases of epilepsy from other brains, and in my opinion the quantitative differences are due probably not to the form of insanity, but to personal variations ; possibly

the mode of death in different cases, slow or rapid, seizural or non-seizural, may have some influence.

All brains were placed in the first solution within thirty-six hours after death.

There were wide individual differences in the behaviour of the solutions in precipitation and resolution. Treated in exactly the same manner the solutions were all slightly viscous, but some were translucent, and others markedly opalescent. The great majority of the solutions became suddenly turbid when the adequate quantity of acetic acid had been added, and the amorphous nature of the precipitate was observable within half a minute although it settled slowly in the long graduated tubes which I used. In other cases, although the opacity increased suddenly, the aggregation of the particles to form the amorphous precipitate did not occur until an hour after the acid had been added.

In one case, from an imbecile brain, while the opacity was increased by the addition of acid no precipitate appeared in twenty-four hours, but I then obtained a small precipitate containing a minute trace of phosphorus by adding 15 minims of 10 *per cent.* nitric acid to the 30 c.c. of solution. I estimated the phosphorus contents in the thirty-seven samples of nucleo-proteid, and thirty-one of the lipoids, and found that it bore a fairly constant ratio to the amount of the precipitate.

In two samples which were prepared with half the usual amount of sodium carbonate solution to the same quantity of brain substance I obtained, by carefully adding the weak acid to the alkali solution in a series of test-tubes, a precipitate when the reaction was neutral to the sensitive litmus of Kubel and Tieman, but in five other similar concentrated solutions which I tried no precipitate appeared until the solution turned acid.

The precipitated nucleo-proteid has a ready affinity for basic dyes. In two specimens, which I allowed to stand for over a week in the precipitated state, I found when examined microscopically a few well-marked crystalline rosettes, exactly resembling the crystals of uracil, a pyrimidine body, among the *débris*, but the majority of stale precipitates showed no such change.

I found that the addition of various salts produced a similar phosphorus-containing precipitate to that of acetic acid, those

most rapid in effect being calcium and sodium chloride, and magnesium sulphate. The addition of saturated calcium chloride to a quantity of macerated brain produced a thick coagulum which lay at the top of the solution. In some cases this reaction was so rapid that, using test-tubes of an inch diameter, the whole tube would be inverted without the fluid flowing past the coagulum within half an hour. No other salt produced such a rapid effect as calcium in this way. This effect could not be produced upon the residue left after the nucleo-proteid extraction by sodium carbonate, and I surmise that calcium, which is always found in brain substances, has a special coagulative effect in strong solution upon the unaltered nucleo-proteid elements, although it produced a simple precipitate and not a coagulum from the alkaline solutions.

In addition to the nucleo-proteid elements of the cells of the brain, the following substances can be found: the purin bases, paralactic acid, phosphocarnic acid, and uric acid. Metabolism is always most rapid and complete when the fluid which bathes the cells is alkaline. The process of metabolism causes the accumulation of acid substances which are disintegration products. This accumulation gradually prevents or diminishes the degree of further change, and so the equilibrium of body metabolism and that of the cortex is maintained. I have already referred to the extreme fineness of the cortical capillaries, and to the comparatively large perivascular lymph system by which the interchange of substances between blood and tissue cells is rapidly effected.

#### *The Action of the Halogens upon Proteins.*

The relation between chlorine, bromine, and iodine and the proteins has only received any considerable degree of attention in recent years, although as long ago as 1848 Mulder obtained a precipitate which he called "protein chlorous acid" when chlorine was passed into a solution of egg-albumin. The method which is now chiefly used (72) is the passage of a stream of chlorine or bromine through a weakly alkaline solution of protein. Blum and Vaubel found that it was only in an alkaline solution that the maximum halogen-protein combination could be obtained. "A definite series of bromine derivative was obtained from proteids, each with a constant



amount of bromine, by varying the methods of preparation. It was not found possible to obtain such a definite series with either the chlorine or iodine preparations."

The precipitate formed is soluble in 1 *per cent.* sodium hydroxide, and suddenly reprecipitated by addition of a slight excess of weak acetic acid.

It is interesting to observe the exact similarity in the solubility of these compounds and that of the nucleo-proteins, especially in view of the fact that both the substances used in these investigations, caseinogen and ovalbumin, contain phosphorus in protein combination in considerable quantity.

From my own observations I believe that the halogen affinity is greater in the case of the phosphorus containing proteins, and especially the nucleoprotein, than in any other group.

I have observed the effect of bromination upon a considerable number of solutions of nucleo-protein obtained from brain, and find that in bulk and weight the bromine precipitate was usually slightly larger than that obtained by precipitation by acetic acid. The bromine solution was prepared by slightly heating manganese dioxide and pure hydrochloric acid in a strong flask with a curved outlet tube from the neck. The stream of chlorine was led to the bottom of another flask, also kept slightly heated, in which lay a saturated solution of potassium bromide. I placed the solution to be brominated in an ordinary Soxhlet fat extraction tube, allowing the bromine to enter by the thin looped tube at the bottom, so that it bubbled up through the contained fluid. By this means the sudden precipitation of the halogen compound is well demonstrated. By variations in the degree of heat applied to the two flasks the quantity of bromide applied, as shown by the rate of bubbling into the Soxhlet tube, could be maintained uniformly. The time taken for precipitation varied from three quarters of a minute to seven minutes, with no obvious cause except individual differences in the stability of the nucleo-proteins and their bromine affinity. A similar but less satisfactory result was obtained by quickly passing a few drops of bromine in liquid form to the bottom of a large Stokes' tube containing the solution, and then agitating the tube.

Examination of solutions which have been subjected to bromination, but not to the degree of precipitation, showed the

important fact that a slightly larger amount of acetic acid is required to effect precipitation of the nucleo-proteid than in a simple solution through which no current has been passed. Bromine precipitate likewise requires the addition of slightly more alkali for solution than the simple precipitate. This difficulty in precipitation and resolution increases as time elapses, and I have found that a bromine precipitate kept for two months in a stoppered tube is very slowly soluble even in 5 *per cent.* sodium hydroxide. This also applies in a less degree to the non-brominated precipitates.

In addition to the alkaline solution the blood plasma and cerebro-spinal fluids exhibit a similar sudden precipitate on bromination, but, owing possibly to the small quantities available, I was only able to be sure of the presence of phosphorus in two cases of blood plasma out of four, and in none of the cerebrospinal fluids, of which I tried five.

Phosphorus was present in all the bromine precipitates of nucleo-protein from brain. It is probable that the action of the bromine is to precipitate the nuclein, and a varying protein moiety. Whether this is due to the substitution of hydrogen by bromine in the molecule is not known. From the behaviour of the precipitate in the partially brominated solution I have come to the conclusion that the effect of the halogen union is to fixate the large nucleo-proteid molecule, and render it less liable to rapid change. If this be so the presence of bromine in the nucleo-protein of the living cells would act as a restraining influence upon its metabolism.

This view was formed chiefly upon the foregoing observations of increased resistance to change of physical state. The action of the bromide salts upon the albuminous bodies of a sensitised photograph plate in restraining the rapid chemical changes therein on exposure and development is interesting.

Albertoni (73) has observed that a considerably stronger current of electricity is required to excite the cortical motor neurons of a dog which has been dosed with bromide. The iodine content in the iodothyreoglobulin has been shown to be high after potassium iodide administration (74), and Falta (75) states that "iodised albumens are metabolised more slowly than simple albumens."

In addition to the glycogen reaction of the blood which is found in certain serious conditions, an intra-cellular and

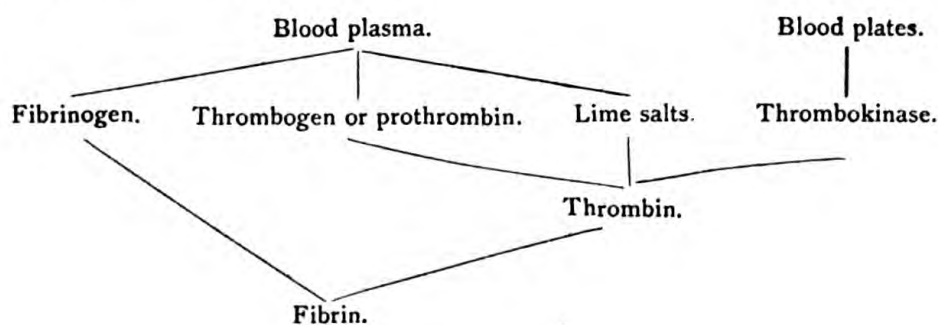
extra-cellular iodine reaction has been shown to be present in physiological conditions (76). By the action of iodine vapour on moist smears a granular staining of the protoplasm of the lymphocytes, and a diffuse staining of the polymorphs have been exhibited. A similar extra-cellular iodine reaction has also been found which Gabritschewski and Zollkofer have shown to be masses of blood plates. This extra-cellular reaction is also found at times in healthy blood, and in states of acidosis such as diabetes, the cause for its variability in healthy blood not being known. I examined a number of epileptic bloods by this means, and was surprised to find the reaction present in six out of the first eight cases which I tried. I substituted bromine for iodine vapour, and was impressed at once by the appearance of a marked reaction in my own blood, distinct extra-cellular granules being observable, and the nuclei, especially those of the polymorph cells, being very well defined. I am convinced that the extra-cellular elements consisted of blood plates, and I believe that the variations in the stainability of the intra-cellular granules is exactly comparable to the changes in the affinity for the basic dyes observed by Gage and Mann which will be described in a later paragraph. If my assumption, that the stainability is dependent upon the nucleo-proteid content of the blood, be correct, its greater definition in the hypo-alkaline or slightly acid states such as diabetes and uræmia is explainable. I obtained well-marked positive results, by a variation of the method in every epileptic case which I examined. A strong aqueous solution of bromine water was prepared, and a drop of this was mixed with an equal sized drop of freshly drawn blood upon a cover slip, and at once mounted in levulose upon a slide. Stained in this way the nuclei of the leucocytes are exceedingly well-defined, and the blood plates can easily be counted in relation to the leucocytes, the red cells being to a large extent hæmolysed. These blood plate enumerations vary, however, so greatly in slides prepared from the same cases at the same time that no statement as to their number would be of the slightest use, and I believe that their variation was not due to the staining method, but to the great rapidity with which the blood plates change in number in shed blood in process of extrusion from, or disruption, of the polymorph cells, and in their speedy disappearance as entities as they interact with prothrombin to form thrombin. The

widely different results which all observers have obtained in blood plate enumerations contrasted to the counts of the real formed elements, the white and red corpuscles, support this view, and any comparative estimation made by any method is liable to be fallacious, unless the fixation of the plates can be effected at precisely the same second from the time at which the blood leaves the blood channels.

In the blood, as in the brain, the nucleo-protein content is high, and is of great importance in the production of agglutination and coagulation. The viscosity and coagulability of the blood can be altered by dietetic and medicinal means by the increase of ingested nucleo-proteid and its components.

The disruption of the polymorph cells increases the purin content of the blood, and so the secretion of uric acid. We have seen that the sudden introduction of nucleo-proteid in excess into the blood of animals is productive of extensive intra-vascular coagulation, epileptiform seizures, and, with sufficient amount, death. We also know from the observations of Turner that the nucleo-proteid coagulative elements are found in excess in the cortical blood vessels of epileptics and, from the observations of Mott, that a biochemical change occurs in the cortical cells rich in nucleo-protein dependent upon the condition of the surrounding lymph.

The theory of fibrin formation in most general acceptance may be illustrated thus: (77)



A large increase in the polymorph leucocytes takes place after the ingestion of protein-rich food (78). The proteins are the chief agents in the production of the so-called digestion leucocytosis, being more effective in this way than the fats. Gage and Mann (79) have also shown a large increase in the nucleo-protein elements of the blood, and an increase in their stainability,



after the ingestion of protein substances, and of the phosphorus-rich substance sanatogen.

It has been shown (80) that the injection of nucleinic acid constantly causes a hyper-leucocytosis, without increase in the mononuclear cells. The assimilation of nuclein-rich foods causes increase in the output of the purin bases and uric acid in the urine. Purin bases when assimilated also increase the uric acid excretion; this in part is due to a direct alteration in the purin bodies and the blood, and partly to a disintegration of the nucleo-protein of the cells (81). In leucocythemia, in which there is an excessive leucocyte formation and destruction, the purin bases of the blood and urine are markedly increased (82). Albumosuria is common and a diminished alkalinity of the blood is stated to be present (83).

We know that a great destruction of the leucocytes takes place on coagulation, and this is most marked in the polymorphs.

The relation between diminished alkalinity of the blood and increase in the viscosity and coagulability of the blood has also been mentioned. That the blood in epilepsy at all times, and especially immediately prior to a fit, is hypo-alkaline has been demonstrated, and also the relative decrease in the polymorph cells after a convulsion.

Lowit (84) has observed that agents which when injected intra-venously cause a leucocytosis, produce, as an immediate primary result, a leucolysis; among such substances are peptone, nuclein, and uric acid.

These facts, together with the evidence in the urines of nucleo-proteid decomposition in the uric acid, phosphates, and albumosuria, are strong indication that such a change in the leucocytes occurs at the convulsive period, with its attendant coagulative effect. The presence of the nucleo-proteid coagulants in the cerebral blood vessels strengthen this opinion.

A considerable reduction in the alkalinity of the blood in the acid states, such as diabetes, uræmia, and eclampsia, in all of which convulsions occur, has a further effect. In all acid intoxications the calcium content of the blood increases, apparently at the cost of the tissues (85). Very slight alterations in the percentage of calcium causes profound change in the nucleo-proteid substances (86). I consider it highly probable that in the increasing acidity of the blood in status epilepticus the calcium content of the blood increased in this

way, and so develops the stasis and agglutination which produce the ordinary fit into a coagulation with fibrin formation, which produces in most cases death.

We have seen the effect of the mass action of  $\text{CO}_2$ , suddenly applied, in increasing the alkalinity of the serum. I believe that this change tends to prevent further leucolysis when the convulsion has once taken place. Along with the increased pulse rate, the rise in blood pressure and the aid of anastomotic channels, the sudden cyanosis thus acts as a remedial agent in a convulsion.

### *The Exciting Cause of a Convulsion.*

The application of the preceding sections upon the metabolic changes of nucleo-protein in brain and blood to the convulsive manifestation will form the conclusion of this thesis.

The acid products of metabolism—in the body chiefly lactic and carbonic acid, and in the nucleo-protein rich cells, such as the cortex, uric acid, and carbonic acid—these products tend to inhibit the further progress of metabolism. Additional factors also arise. The increase of viscosity of the blood in the capillaries causes a slight slowing of the stream, and a diminished supply of oxygen. The diminution of metabolism is further reflected upon the rate of flow, the metabolic activity of the cells, *per se*, being an influence in stimulating capillary circulation in the cortex, by the rapid movement of the protein atoms and molecules in and between the cells, lymph spaces, and fine capillary channels (87).

The result of prolonged mental exertion produces physiological indicants to rest in drowsiness, impaired perception, and dulling of the special senses, along with impaired motor control. If the required rest be not afforded these symptoms develop into headache, irritability, and, in advanced fatigue, a tendency to insomnia by the morbid stimulation of the exhausted cells by the toxic accumulants. If, however, rest be given in the earlier stages of fatigue, sleep ensues. To effect this state of rest, the stimulation of the special senses is diminished by darkness and silence. The adoption of the recumbent position causes congestion of the cerebral vessels. These vessels dilate, and this in the cortical regions causes the entrance of the lymph with its acid contents into the blood stream, and further

increases viscosity. The slackening of the stream is increased by the lessened force of the heart's action, by a slight fall in the blood pressure, and by the diminution in the effect of the respiratory pump as respiration becomes slow and shallow. The application of warmth also favours agglutinative change.

The result of the interaction of all these factors is a gradual "sleepening," and ultimately sound sleep, when metabolism in the cortical areas is at a standstill. The reflex pontomedullary centres, which control the vital functions, are not similarly affected because of the differences, already mentioned, in the calibre of the capillaries, and the completely different lymph vascular arrangement which exists in all regions outside the cortex.

As the viscosity and sluggishness of the cortical capillary stream increases the sleep deepens, and it has been demonstrated experimentally that viscosity is greatest at the time of deepest sleep.

The acid accumulants are gradually removed from the blood by the kidneys and skin, and the capacity for action of all the cells of the body and brain is slowly but completely restored. As the alkalinity increases, the proclivity to rapid metabolism reappears, and slighter and slighter stimuli will provoke excitation of the cortical cells, and a return to consciousness.

In relation to these phenomena, which are gradual and self-regulative in their action, there are numerous deviations in the healthy subject which are relevant and important.

After excessive exertion, especially mental, a familiar occurrence is the sudden start which rouses an incipient sleeper. "It is an insubordinate action of the motor centres occurring during the gradual withdrawal of the higher control" (88). It is due in my opinion to a sudden degree of stasis produced by the entrance of the acid katabolic substances to the blood stream from the large lymph spaces in the motor areas, so suddenly effected that a sudden failure in the oxygen supply is produced instead of a slow diminution.

Sudden night terrors, and the phenomena of somnambulism are due, I believe, in a large measure to an absence of harmony in the progression of the various factors which produce and maintain unconsciousness.

If the cardiac action be irregular, agglutination may occur on a sudden fall in the pulse rate when the highly viscous blood

is slowly passing through the capillaries, and a sudden increase in the carbon dioxide in the lymph takes place, a morbid toxic stimulation of the cells occurs, and the phenomenon of the Stokes-Adams seizure is evinced.

If, on the other hand, an ordinary syncopal attack occurs by day the blood pressure falls more slowly, and, the blood not being in an especially agglutinative state, unconsciousness is produced with less rapidity.

If the defective factor be the blood and lymph contents, a state of narcolepsy may be similarly produced at any hour of the day, but especially after meals, by a comparatively slow degree of morbid cortical stasis.

These conditions form the connecting link between the one extreme of healthy physiological conditions of cortical activity and inactivation, of waking and sleeping, and the other extreme of the epileptic state in which the blood and lymph anomalies take effect so quickly that the morbid excitant effects of stasis are produced instead of the slow and gradual unconsciousness.

In the epileptic, metabolism is at all times carried on in the minimal degree of alkalinity of the blood and lymph, and the equilibrium of the cerebral circulation, delicate in the healthy, is reduced to an extreme degree of instability in epilepsy. Any excitant to further increase in viscosity, stasis, and agglutination, may provoke a convulsion, and thus we find the attacks occur at the times when there is a natural slight tendency to stasis, at the inception of sleep, and in the hours of deep sleep, and when the coagulative elements of the blood are high after the ingestion of nucleo-protein and purin.

The decrease in the poly-nuclear cells, which are coagulative elements, and the appearance in the urine of the decomposition products of coagulative bodies serve to indicate that agglutination must have occurred. The discovery of evidence of such agglutination in excess in the epileptic brain supports this statement. The effect of the administration of the alkalies in raising the blood state from the danger level of marked hypo-alkalinity, of the bromides in fixating the cortical acid producing substances and the coagulative elements of the blood, and of digitalis in raising the general level of blood pressure, lend support from the therapeutic standpoint to this view.

I believe that the epileptic phenomena are due to a morbid development of one factor in the natural physiological *régime*,



the reduction of alkalinity dependent on metabolism, and the effect of the comparative acidulation of the serum upon the coagulative elements in the blood, that this acidulation of the lymph and blood is produced by too rapid metabolism of the nucleo-proteid of the cortical cells and other nucleo-protein containing tissue, which also, in the circulating media, show a proclivity to an abnormally rapid agglutination, and that the primary cause is an inherent defect in the nucleo-proteid tissue elements which may be hereditary.

### *General Summary.*

The manifestations of epilepsy, the convulsive seizure, and the minor attack are due to a sudden anæmia of the cortex causing a discharge of the cortical nerve cells.

This anæmia is produced by a sudden stasis and agglutination of the nucleo-proteid coagulative elements of the blood in the cortical capillaries.

An unusual proclivity to agglutination, and a hypo-alkaline state of the blood, exists in epilepsy, which renders such a stasis possible at any moment.

Such a sudden agglutination may be produced when the nucleo-proteid elements of the blood are increased by ingestion of nucleo-protein and purin bodies, and at the inception of sleep and advancing stages of its profundity.

The post-paroxysmal changes in the blood and urine indicate that a rapid disintegration in the nucleo-proteid elements has occurred.

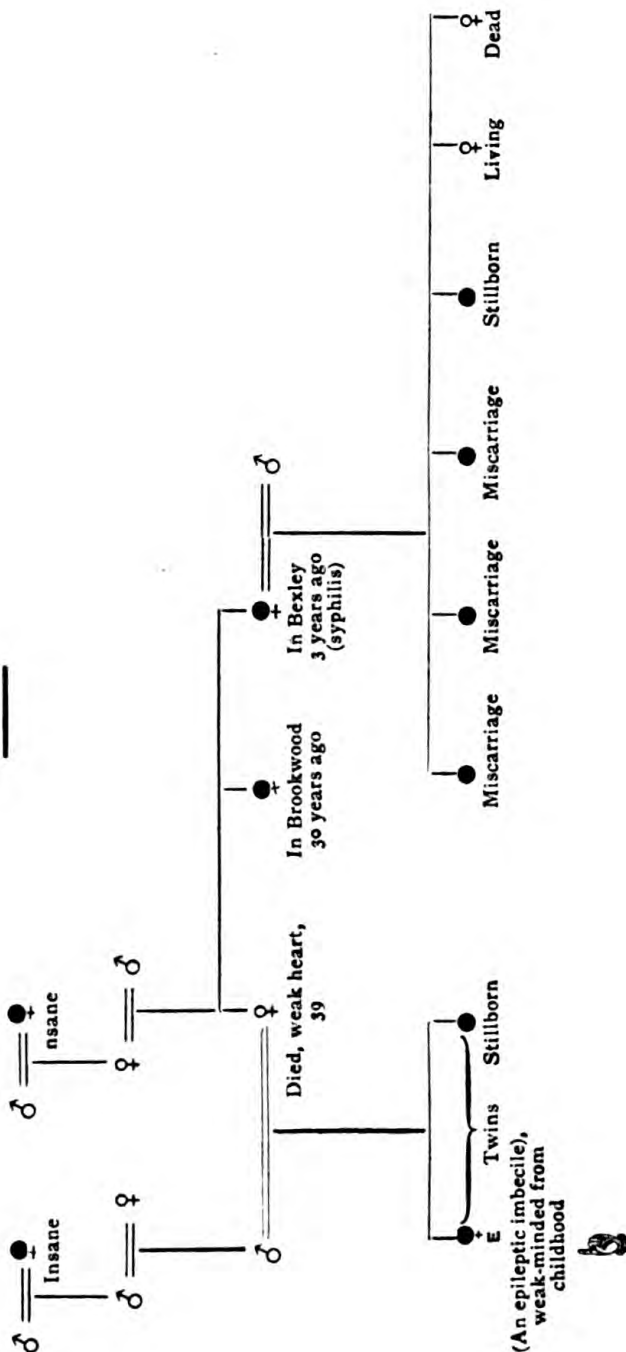
The *post-mortem* findings indicate the excessive production in the brain of such nucleo-proteid agglutinations in the cortical capillaries, and an excessive biochemical change in the cortical cells which are rich in nucleo-proteid.

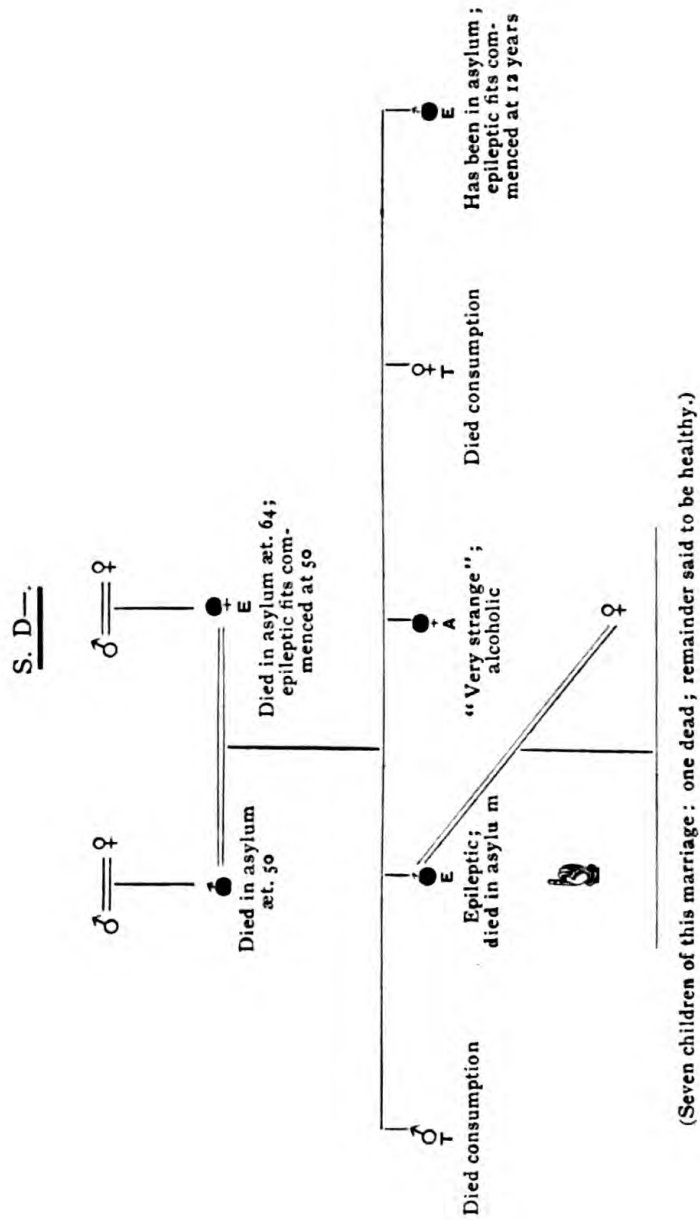
The administration of alkalies reduces the coagulative tendency, but, by facilitating metabolism, cannot reduce the number of the convulsive attacks other than temporarily. The bromides have a particular affinity for the nucleo-proteins, and act by inhibiting their rapid metabolism; this diminishes the acidulation by uric acid of the contents of the cortical perivascular lymphatics and capillaries, and also renders the polymorphonuclear cells, and the other nucleo-proteid coagulative

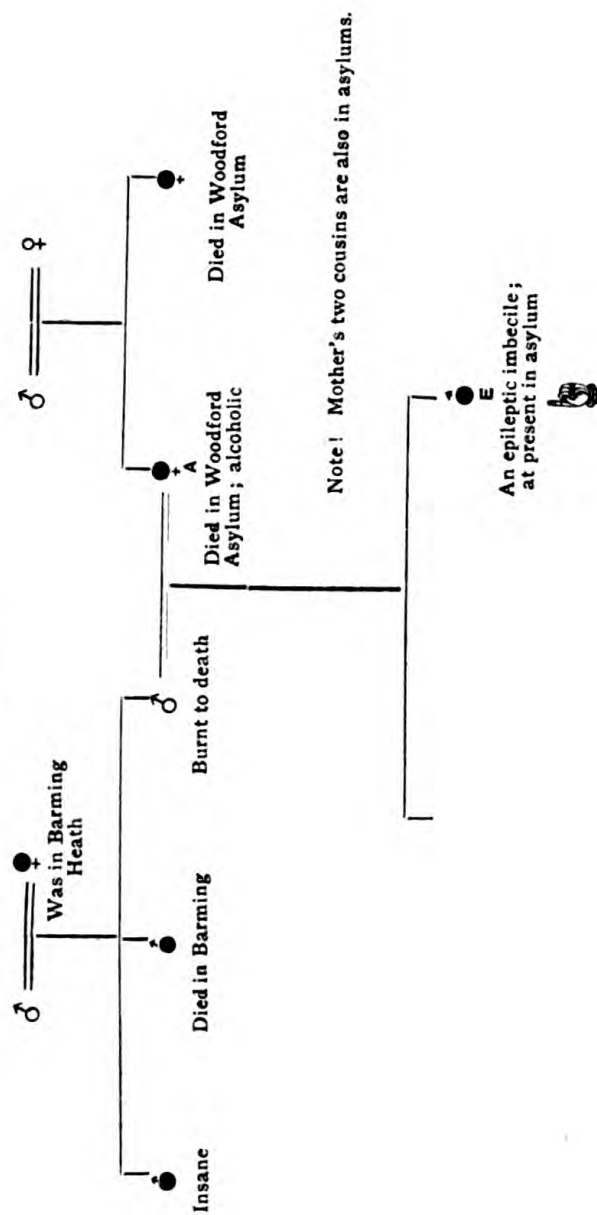
**LX.**

♂ = male. ♀ = female. ● = marriage or still-birth. ♂ = male insane or imbecile. ♀ = female insane or imbecile. The letters E, A, T underneath signs indicate epilepsy, alcoholism, and consumption respectively.

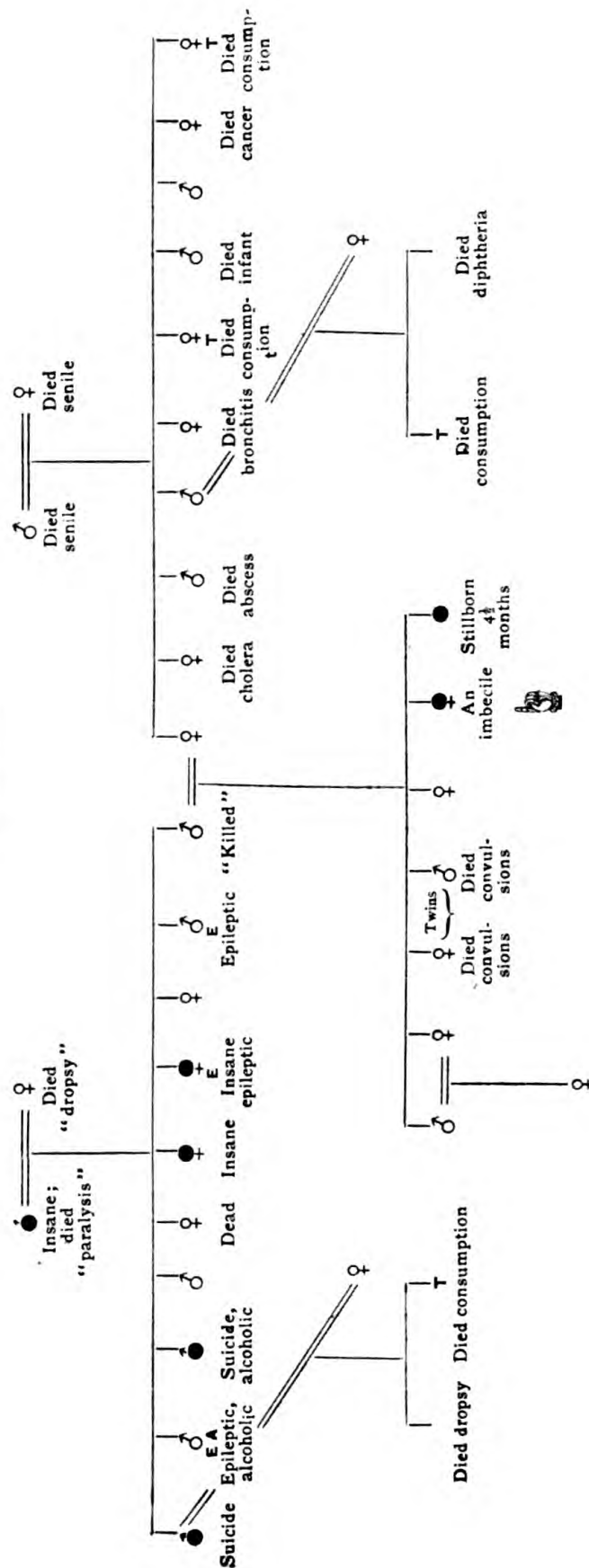
G. L.—



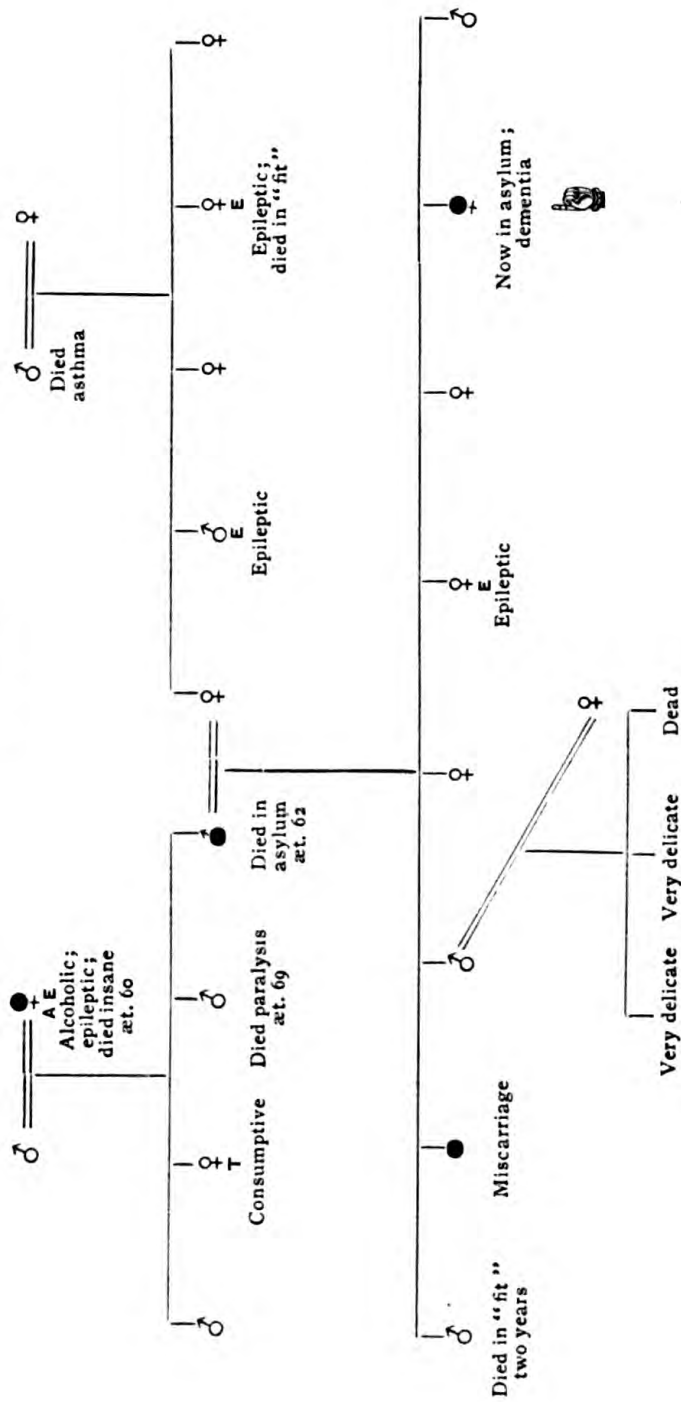


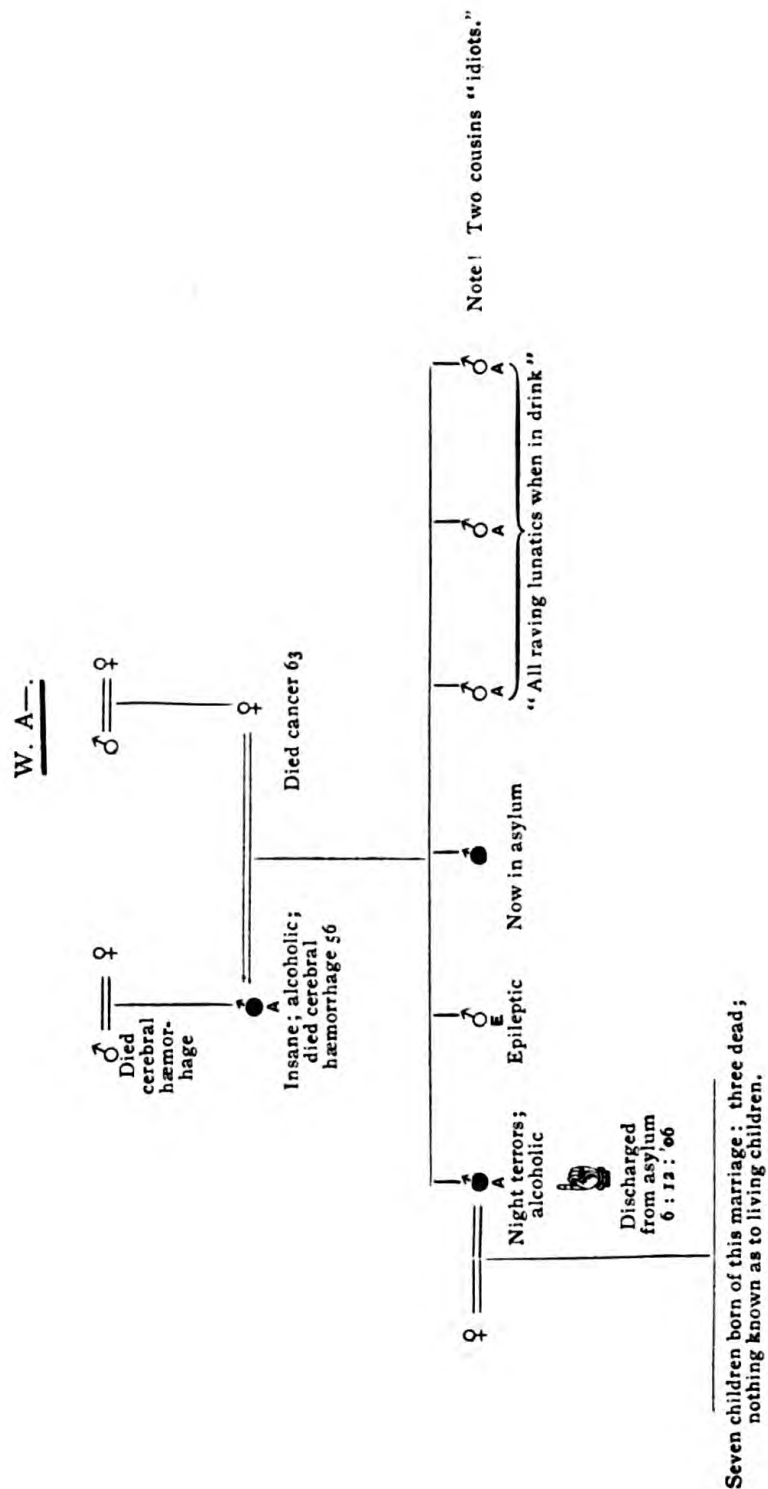
F. S.—





A. M. B—.





elements of the blood, less liable to sudden change. The oxalates are of definite value in the treatment of epilepsy.

The inherent defect is in the chemical instability of the nucleo-proteid elements of the brain and blood, which may be hereditary, or due to the absence of a regulating hormone, at present unknown.

For the privilege of using the clinical material embodied in this thesis I am deeply indebted to Dr. Stansfield, Medical Superintendent, and to the Bexley Sub-Committee of the L.C.C. Asylums Committee.

#### APPENDIX B.

From observation of the action of the blood of epileptics I am convinced that the agglutinative action is one of unusual rapidity.

Working with all possible speed, and drawing the drops as soon as intermixed into the long tube, I managed to obtain a fairly large number of samples. But using the method recommended by Wright, which is quite simple in non-epileptic blood, of making the series of intermixtures on the slide, and then proceeding to draw them one by one into the long tube for observation, I never improved upon the percentage of agglutinations which impressed me upon the first trial of epileptic blood in which only five out of a total of thirty-two intermixtures could be drawn into the tube.

As I soon became aware that the results from the point of view of the calcium content would be worthless, I used only three of Wright's dilutions ( $\frac{N}{80}$ ,  $\frac{N}{180}$ ,  $\frac{N}{320}$  ammonium oxalate in physiological saline) and supplemented them by two strong solutions of sodium chloride (15 *per cent.* and 30 *per cent.*), two similar solutions of calcium chloride and one drop of unmixed blood.

I regret now that I did not attempt to estimate the calcium by Blair Bell's calcimeter after trying Wright's method, but had I done so at first (in Blair Bell's method the blood is drawn straight from the drop at the site of puncture, with no exposure on a slide) I might not have observed the rapid agglutination to which great importance is to be attached. To determine the presence of clot, unless its distinct formation could be seen in the capillary tube, I expressed them into water. Before estimating the results the tubes were kept for twelve hours in a Hearson incubator at 37° C.

#### *Eight Examples of Ammonium Oxalate Dilution of Blood.*

##### *Non-Epileptic.*

W. D— (M.).—Calcium content	$\frac{N}{80}$	no clot	= 0.58 parts of Ca O in 1,000.
	$\frac{N}{100}$	clot	
W. M— (M.).— " "	$\frac{N}{120}$	no clot	= 0.41 " " "
	$\frac{N}{150}$	clot	
J. J. M. S— (M.).— " "	$\frac{N}{200}$	no clot	= 0.26 " " "
	$\frac{N}{240}$	clot	



S. A. B—(F.).—Calcium content  $\frac{N}{100}$  no clot  
 $\frac{N}{120}$  clot = 0.5 parts of Ca O in 1,000.

In this case dilution  $\frac{N}{280}$  agglutinated on slide, the only such instance among non-epileptics.

E. E. B—(M.).—Calcium content  $\frac{N}{200}$  no clot  
 $\frac{N}{240}$  clot = 0.25 parts of Ca O in 1,000.

A. W. P—(M.).— " "  $\frac{N}{180}$  no clot  
 $\frac{N}{200}$  clot = 0.29 " " "

W. E.—(M.).— " "  $\frac{N}{200}$  no clot  
 $\frac{N}{240}$  clot = 0.25 " " "

*Epileptic.*

J. R. H—(M.).—All mixtures except  $\frac{N}{150}$  agglutinated on slide, and could not be drawn into tube.

F. D. H—(M.).—The last two intermixtures only could be drawn in, and these did not clot.

H. O. M—(M.).—Several stabs required before blood flowed sufficiently. All agglutinated on slide before intermixture.

J. McC—(M.).—Two only obtained ( $\frac{N}{240}$  and  $\frac{N}{280}$ ); neither clotted in tube. On expression into water the small amorphous masses dispersed at once.

A. W—(M.).—Three weaker solutions only obtained; no clot in tube.

R. B—(M.).—All agglutinated before intermixture.

R. W—(F.).—Four dilutions obtained; no clotting in tube.

E. H—(F.).—Three obtained; slight clot (which sank to bottom in water in white porcelain dish and then broke up) formed in  $\frac{N}{240}$  dilution.

M. H—(F.).—All except  $\frac{N}{100}$  and  $\frac{N}{280}$  agglutinated before intermixture, and none could be drawn into tube for observation.

*Three Samples of Ammonium Oxalate Dilution ( $\frac{N}{80}$ ,  $\frac{N}{180}$ ,  $\frac{N}{320}$ ), Two of Sodium Chloride, Two of Calcium Chloride, and One Unmixed Drop of Blood.*

*Epileptic.*

A. C. G—(M.). All agglutinated on slide. Only a few minute drops of the fluid mixed with air bubbles could be obtained from the base of the drop. If the point of the tube was placed in the middle of the drop and suction applied, the agglutinated mass formed a plug and did not enter the tube.

D. A. W—(M.). All ammonium oxalate dilutions; the weaker calcium

chloride, and the unmixed drop were obtained. No coagulation occurred in ammonium oxalate; in calcium dilution a true retractile clot formed; the unmixed drop agglutinated, and lay along the wall of tube.

From the remainder of the cases (five male and six female) I likewise obtained no information regarding the calcium content, as in no case did coagulation occur in the ammonium oxalate dilutions. In all the instances (4) in which they were drawn into the tube a true retractile clot formed in the calcium chloride solutions.

In seven similar instances (out of a total of eight obtained) retractile clots formed in one of the sodium chloride solutions.

In only one case (G. F. G— (M.)) did a true clot form in an unmixed drop out of eight obtained.

From these results I make the following deductions:

That an unusual proclivity to agglutination on exposure, and on contact with a foreign body, exists in epileptic blood.

That epileptic blood, except when mixed with fairly strong solutions of the chlorides of calcium and sodium, rarely forms a true strong retractile clot in a capillary tube.

#### APPENDIX C.

##### *Differential Leucocyte Count.*

Out of eleven differential counts in patients who were having frequent fits in only three instances was I successful in making a count at an interval not longer than one hour before a convulsion, beyond which limit I did not consider the count could reasonably be termed pre-paroxysmal. In these three cases I managed to draw blood for the post-paroxysmal count within ten minutes after the cessation of clonic spasm. The results of these differential counts show a relative decrease of polymorphonuclear cells of a varying degree, and in all cases an increase in the total leucocyte count.

	Pre-paroxysmal.				Post-paroxysmal.			
	Polynuclears.	Large lymphocytes.	Small lymphocytes.	Eosinophiles.	Polynuclears.	Large lymphocytes.	Small lymphocytes.	Eosinophiles.
G. C— (M.)	per cent. 78	per cent. 7	per cent. 13	per cent. 2	per cent. 61	per cent. 12	per cent. 23	per cent. 4
J. Mc. C— (M.)	White blood-c 74	orpuscles 5	s 20	9800	White blood-c 71	orpuscles 11	s 15	12200
A. W— (M.)	White blood-c 69	orpuscles 8	s 21	11200	White blood-c 61	orpuscles 6	s 28	11800
	White blood-c	orpuscles	s	11400	White blood-c	orpuscles	s	12400

The other differential counts showed no marked abnormalities except an eosinophilia of 7 per cent. in one case.

## APPENDIX D.

*Estimation of Urinary Changes.*

In the examination of the pre- and post-paroxysmal urines on eighteen occasions of *grand mal*, and on five occasions of *petit mal*, the uric acid estimations were made by heating five drops of urine with one drop of pure nitric acid in a white porcelain dish. When evaporation was almost complete a drop of liquor ammonii fortis was placed at the edge of the residue, and the absence of change, or the intensity of the purplish colouration, gave a fair indication of the quantity of uric acid present. In two female post-paroxysmal urines distinct uric acid crystals were visible (89).

The albumose test was carried out by heating 5 c.c. of urine, filtered if necessary, with ten drops of a saturated solution of picric acid; if the resultant solution was perfectly clear it was allowed to stand for one hour and the appearance of a distinct cloudiness was taken as a positive reaction. In the cases which I examined by the half and complete saturation with ammonium sulphate, I found both primary and secondary albumoses were present. In some cases crystallisation of uric acid occurred in these positive albumose solutions (90).

The constant increase in the quantity of mucin passed was very striking. We should expect that changes in the blood and lymph which affect the nucleo-protein should also affect the mucin elements whose solubilities are exactly similar in the body fluids.

In eighteen consecutive examinations of the last urine voided before the convulsive attack, and the first voided after, the uric acid content was in each case increased; the albumose was increased in fourteen cases, the mucin was increased in seventeen cases.

In five cases of *petit mal* the uric acid was increased in three cases, the albumose was increased in three cases, the mucin was increased in all.

In no case was the quantum of any of the three substances diminished after the convulsion, but the degree of change was less marked in *petit mal* than in *grand mal*.

## APPENDIX E.

*Phosphate Excretion in Two Cases.*

The total excretion in both cases was comparatively low. The dietary of an asylum, and the comparative lack of exercise, are the probable causes of this condition. The excretion is greater after the convulsive attack.

The striking change in the time incidence of the convulsions in H. O. M— followed the substitution, on April 1st, of a pint of breakfast coffee for a pint of cocoa.

Sanatogen produced a rapid and pronounced deleterious effect on this patient, increasing the number and severity of his attacks; during the time of its exhibition he was in a state of confusion and unable to work.

The quantitative phosphate estimations were made by the uranium nitrate titration method, with tincture of cochineal as indicator (90).

## APPENDIX F.

*Summary of Treatment.*

In addition to the bromides of ammonium, sodium, and potassium, I have observed the effects upon epileptic patients of the following substances: Ammonium oxalate and oxalic acid, calcium chloride, calcium lactate, calcium glycerophosphate, sodium carbonate and bicarbonate, lecithin, liquor thyroidei, sanatogen, phytin liquidum, parathyroid extract (I obtained a small quantity of this substance from Messrs. Allen and Hanbury; prescribed in cachet in 2 gr. doses twice a day, it produced no effect in two cases, and its cost precluded more thorough investigation).

In all the cases which were treated I omitted all medicine except the ordinary institution aperients for at least three weeks in patients who were having frequent fits, and for periods of two or three months in patients who had few fits. No patients whose fits occurred in cycles were chosen for therapeutic investigation, as fallacious conclusions of success or failure might have resulted from their irregular manifestations.

From the administration of oxalic acid and ammonium oxalate I obtained very good results in thirteen out of sixteen cases. Their most marked effect lay in the shortening of the post-paroxysmal states of stupor and headache, and in the improvement in the patient's mental state in the interparoxysmal period. One example of the change in manner of recovery I have already described (p. 27), and in varying degree this effect was observable in all the cases.

In three cases, along with a reduction in the total number of paroxysms, the minor attacks almost entirely disappeared.

Of the three cases which I consider unsuccessful, two were patients who were having infrequent fits, which were not inhibited by oxalic acid, as could be done by bromide. The third case was interesting. On large doses of bromide (ammon. brom., pot. brom., stront. brom. ā.ā. gr. x, t.i.d.) the patient had an average, over five months, of nine fits per week. When I omitted the bromides he immediately commenced to have a large number of nocturnal fits, from three to six per night, and after five days in this condition I commenced the small doses of oxalic acid. This produced no effect in reducing the number of his attacks in seven days, and I was forced to restore the bromides to him. It is now seven weeks since the bromides were restored, and his average number of fits is still high compared with his original state on bromides. The attacks in this patient are almost entirely nocturnal in his normal routine, but when kept in bed during the day for mental or physical reasons, his postural incidence is shown by frequent attacks. His nocturnal attacks were not, however, diminished by sleeping in a semi-recumbent position.

The beneficial effects upon two of the thirteen cases became less marked after the expiry of five weeks in one instance and seven in the other. By the administration of 1 gr. of oxalic acid in the morning and 10 gr. of bromide in the evening, in these two cases the total number of fits is still much below that of the period in which no medicine was given. I prescribed these substances as follows:



R Oxalic acid, gr.  $\frac{1}{2}$  (or ammon oxalat., gr. 1)

Aq. ad.,  $\frac{1}{2}$  oz.

Four times a day one hour before meals.

In no case have I observed the slightest ill effect with these doses. My original use of oxalic acid was the result of a conviction that the epileptic manifestations were produced by an agglutinative or a coagulative process. From citric acid I obtained no results, and, finding that oxalic acid had been used therapeutically in scurvy, I determined to try it, and I consider the results very gratifying. Of the two substances I prefer oxalic acid to ammonium oxalate. The immediate recrudescence of the post paroxysmal symptoms in several cases, when these substances were omitted and bromides prescribed, has convinced me of their usefulness.

It is highly probable that the oxalic acid acts by inactivation of the calcium of the blood as a coagulative factor. Its presence does not inhibit agglutination outside the body in epileptics, as has been shown in Appendix C. I consider it probable that the oxalates may neutralise the excess of calcium which is drawn from the tissues in the markedly hypo-alkaline states, and so may diminish the tendency to disruption of the polymorph cells which in excess of the ordinary calcium salts in the blood will effect. In this way the earliest factor favouring agglutination, the excess of blood plates, may be counteracted, although the addition of the oxalates to the shed blood in which the disruption has already occurred cannot stay agglutination. Cramer and Pringle (92) have shown that the effect of the oxalates is to keep the blood-plates intact and so prevent coagulation. I believe it is probable that the rapid recovery after convulsions, shown by patients on the oxalates, may be due to the limitation of the blood-plates to their mechanical effects in contradistinction to their chemical potentialities.

The exhibition of the calcium salts produced a slight increase in the number of the fits, and in some cases a striking change in their character in the way of a marked lengthening of the pre-convulsive stage of twitching or rigidity. It is probable that the comparatively slight effects produced by calcium are due to the difficulty of raising the calcium content of the blood by therapeutic means which Addis has demonstrated. I prescribed calcium as follows:

R Calc. chlor., gr. xx (or calc. lact., gr. xx).

Aq. ad., 1 oz., *t.i.d.*

R Calc. glycerophos., gr. xx.

Aq. aurant. ad. 1 oz., *b.i.d.*

From the alkalies, sod. carb. or bicarb. (gr. xxv) *t.i.d.*, I obtained very good effects, the number of fits being, in some cases considerably reduced and the mental state improved. Glycerine of lecithin (3ij, *b.i.d.*) had no marked effect nor had liquor thyroidei, ℥x, *t.i.d.*

Sanatogen (3j, *b.i.d.*) and, to a less degree, phytin liquidum (a vegetable preparation containing calcium and magnesium phosphate with diphosphoric acid) (3  $\frac{1}{2}$ , *t.i.d.*) produced a definite increase in the number and severity of the convulsions.

## APPENDIX G.

Sex and age.	Epileptic or non-epileptic.	Heart.	Blood vessels.	Blood pressure.	Pulse mobility.					Tache cérébrale.	Capillary pulsation.
					Before rising.	Ave. rage.	After rising.	Ave. rage.	Difference.		
M., 32	E.	o	+ slight	195	51	52	59	63	11	—	—
					50		65				
					55		66				
M., 66	"	o	+ slight	135	61	57	68	69	12	—	—
					55		70				
					56		68				
M., 18	"	o	—	117	63	68	88	89	21	—	—
					71		93				
					70		87				
M., 26	"	o	—	142	74	67	78	81	14	—	—
					66		89				
					60		77				
M., 23	"	o	—	135	51	52	52	55	3	—	—
					55		59				
					50		53				
M., 36	"	o	—	122	61	66	86	86	20	—	—
					66		80				
					70		90				
M., 39	"	o	—	140	61	64	87	92	28	—	—
					64		90				
					67		99				
M., 51	"	+	+	138	72	73	97	101	28	+	—
					72		100				
					74		105				
M., 65	"	+	+	220	87	81	106	92	11	—	—
					75		82				
					80		88				
M., 22	"	+ mitral incompetence	—	135	93	90	127	122	32	+	—
					87		117				
					90		120				
M., 79	"	+	+	148	85	86	95	98	12	—	—
					87		98				
					86		101				
M., 23	"	o	—	130	52	51	83	92	41	—	—
					52		94				
					50		99				
M., 36	"	o	+ slight	109	66	62	82	77	15	+	—
					60		76				
					61		74				
M., 49	"	o	+ slight	140	77	74	99	93	19	—	—
					71		96				
					74		83				
M., 43	"	o	—	145	71	75	90	93	18	—	—
					72		88				
					81		102				
M., 72	"	+	+	145	68	68	84	83	15	+	—
					75		84				
					61		80				
M., 34	"	o	—	143	71	68	90	85	17	—	—
					74		87				
					59		77				
M., 46	"	o	+	152	68	73	71	78	5	—	—
					80		84				
					72		79				

Sex and age.	Epileptic or non-epileptic.	Heart.	Blood vessels.	Blood pressure.	Pulse mobility.					Tache cérébrale.	Capillary pulsation.
					Before rising.	Average.	After rising.	Average.	Difference.		
M., 48	E.	+	—	149	71	75	101	104	29	+	—
					79		111				
					74		96				
F., 20	"	o	—	140	87	77	91	82	5	+ slight	—
					66		80				
					77		75				
F., 23	"	o	—	145	59	65	78	78	13	+	—
					74		80				
					63		75				
F., 37	"	o	—	160	71	75	87	89	14	—	—
					79		91				
					74		88				
F., 39	"	o	—	145	59	57	91	94	37	—	—
					53		92				
					60		99				
F., 26	"	o	—	125	86	82	84	90	8	—	—
					79		86				
					81		90				
F., 54	"	+ irregular	—	155	72	74	89	92	18	—	—
					76		96				
					74		91				
F., 20	"	o	—	135	74	78	89	95	17	—	—
					80		96				
					80		99				
F., 32	"	o	Slight	130	64	65	80	90	25	Slight	—
					69		99				
					63		91				
F., 19	Non-e.	o	—	110	75	71	87	83	12	—	—
					65		82				
					72		79				
F., 36	"	o	Slight	154	78	75	81	83	8	—	—
					76		85				
					72		82				
F., 21	"	o	—	140	55	72	68	78	6	—	—
					81		86				
					80		81				
F., 22	"	o	—	140	73	73	77	79	6	Slight	—
					74		83				
					71		77				
F., 49	"	o	Slight	155	89	69	98	89	20	—	—
					59		80				
					60		90				
F., 49	"	o	—	165	82	82	107	103	21	+ +	—
					84		101				
					80		102				
M., 45	"	o	—	118	69	71	86	85	14	—	Slight
					73		86				
					70		82				
M., 46	"	o	—	212	85	79	97	92	13	—	—
					76		93				
					77		85				
M., 40	"	o	—	120	79	73	96	89	16	—	—
					72		84				
					69		88				

In these charts a general impression is sought of the relative stability of the vaso-motor system in epileptic and non-epileptic subjects.

The charts show—

Heart. A + sign indicates the presence of slight cardiac symptoms of shortness of breath on exertion, palpitation, cardio-vascular oedema of the feet, or irregularity in the rhythm of the pulse. No severe cardiac cases with epilepsy are at present in this institution.

Blood vessels. A + sign signifies palpable thickening of the arterial walls.

Blood-pressure. The maximum systolic pressure taken between 3 and 5 p.m.

Pulse mobility. Three observations on the pulse rate of patients were taken before and after rising on consecutive mornings by the trained staff at my request. I have taken the average of these results in each case to estimate the pulse mobility.

*Tache cérébrale.* As the criterion of the presence of *tache cérébrale* I took distinct visibility at a distance of six feet.

Capillary pulsation. In all the cases I examined the mucous membrane of the inner side of the lower lip by pressing lightly with a glass slide; + indicates a visible pulsation.

I also made inquiries in all these cases regarding sleep, and any pronounced tendency to dream. Even if the statements of the patients were reliable, the results were not of great importance, but from the statements of the staff the soundness of the sleep appears to be slightly greater among epileptics than among non-epileptics. From these results I conclude: That a slightly greater degree of vaso-motor instability exists among epileptics than among non-epileptics; that in a few isolated cases this instability may be an accessory cause of a convulsion; that the degree of instability is much less than may be seen in many non-convulsive conditions, *e. g.*, exophthalmic goitre and some central nervous lesions; that, with the exception of the grave circulatory disorder in the Stokes-Adams syndrome, vaso-motor instability is inadequate and unproven as a cause of epileptic manifestations.

#### APPENDIX H.

##### *Quantitative Estimation of Nucleo-Protein, Ether Soluble Substances, and Brominated Nucleo-Protein.*

In making these estimations I early perceived that, with the means at my disposal, the attainment of a high degree of accuracy in the results was not possible, and I have intentionally refrained from basing any deductions affecting the general trend of my thesis upon them. In the specimens of brain which I took for maceration the relative proportion of white and grey matter cannot have been constant, and the method of preparation of nucleo-protein generally employed does not altogether exclude the contamination of other soluble proteins. The only points in these investigations of which I have felt entitled to make use are the solubility and insolubility of the nucleo-protein upon a very slight divergence from neutrality of the solvent, and the effect of bromine in



producing a precipitate which contained phosphorus from a nucleo-proteid solution.

For the tabulated results, therefore, although obtained by careful measurement and uniform methods, nothing more is claimed than a comparative value.

The results quoted represent, first, the quantity of precipitated nucleo-protein obtained from 70 c.c. of a 100 c.c. mixture of sodium carbonate solution with 16 gm. of brain substance (forty-six cases).

Second, the quantity of the bromination precipitate in duplicate solutions to those of No. 1 (twenty-six cases).

Third, the quantity of ether soluble substances (chiefly lecithin) in the same amount of brain substance (forty-six cases).

The acetic acid and bromine precipitates are estimated by their bulk in c.c. upon centrifugalisation after sedimentation for twenty-four hours in a long graduated tube. The lecithin figures represent weight in grammes for 16 gm. of brain substance. An attempt to precipitate the lecithin from the ethereal solution for estimation by adding acetone was useless, owing to the firm adherence of the particles to the sides of the long tubes.

In proving the presence of phosphorus, which I did in thirty-seven nucleo-proteid precipitates by acetic acid, all the bromine precipitates, and thirty-two lecithins, I also estimated its amount by centrifugalising the white precipitate of ammonio-magnesium phosphate. The amounts were too small to dry and weigh with any accuracy, but by the centrifuge I found that the quantity bore a fairly constant ratio to the amount of nucleo-protein and lecithin.

#### *Brain Substance.*

Remove a slice weighing about 60 gm. from the right cerebral vertex, having thoroughly stripped the membranes. Reduce it to pulp within thirty-six hours after death by pounding and pressing through a glass filter funnel with a glass plunger.

#### *Preparation of Nucleo-Protein.*

Weigh out 16 gm. of pulp and place it in a glass cup. Add 100 c.c. of aqueous sod. carb. solution (1.5 per cent.). Stir thoroughly with glass rod, and allow mixture to stand for twenty-four hours. Filter first through coarse and then fine filter-paper, and precipitate by adding about 6 c.c. acetic acid (1 per cent.). Allow to stand for twenty-four hours, and redissolve in .5 per cent. sodium hydroxide, from which precipitate again by acetic acid. The amount of solution which would pass through the filter-papers varied in different cases owing to differences in viscosity, and I was compelled to adopt the standard of 70 c.c. as the quantity from which I proceeded to take a precipitate.

#### *Estimation of Phosphorus in Nucleo-Protein.*

Remove water from above precipitate, and partially dry remainder in crucible without charring. To this add and intermix about ten times its

Form of insanity.	Sex.	Nucleo-protein precipitated by acetic acid.	Nucleo-protein precipitated by bromine.	Lecithins.
		C.cm.	C.cm.	Grammes.
Epilepsy . . . . .	Male	2'2	—	'9
" . . . . .	"	4'2	4'3	1'32
" . . . . .	Female	4'3	4'8	1'1
" . . . . .	"	3'8	3'6	'995
* " . . . . .	"	3'4	3'9	'74
General paralysis . . . . .	Male	6'9	—	1'15
" . . . . .	"	2'8	3'1	'82
" . . . . .	"	2'9	2'7	1'08
" . . . . .	"	1'4	1'5	'45
" . . . . .	"	3'4	3'2	'62
" . . . . .	"	4'1	4	'65
" . . . . .	"	3'2	3'4	'61
" . . . . .	Female	4'1	—	1'1
" . . . . .	"	6'1	—	1'14
" . . . . .	"	3'8	3'9	'95
Organic brain disease . . . . .	Male	5	5'1	'7
" . . . . .	"	3'8	4'2	'92
" . . . . .	Female	5'2	—	1'02
" . . . . .	"	4'1	4'1	'44
" . . . . .	"	4'5	4'7	'41
Dementia (with marked wasting of brain) . . . . .	Male	5'9	—	1'15
Ditto. . . . .	"	3'1	—	'92
" . . . . .	"	'9	—	'86
" . . . . .	Female	3'2	3'7	'75
" . . . . .	"	1'8	1'9	'97
" . . . . .	Male	2'4	2'6	'61
Imbecility . . . . .	Female	(opalescence but no precipitate)		'78
" . . . . .	"	1'9	2'2	'92
Melancholia (no gross lesion or marked wasting) . . . . .	"	1'1	—	'8
Ditto. . . . .	"	1'8	—	'5
" . . . . .	"	5'1	—	1'1
" . . . . .	"	6'1	6'6	1'01
" . . . . .	"	2'4	2'4	'65
" . . . . .	"	4'3	4'6	'73
" . . . . .	Male	3'3	—	'92
" . . . . .	"	5'2	—	'72
" . . . . .	"	2	1'9	1'2
Delusional insanity . . . . .	"	4'7	—	1'1
" . . . . .	"	5'1	—	'56
" . . . . .	Female	4'9	—	1'2
" . . . . .	"	5'1	—	'75
" . . . . .	"	4'2	—	'85
" . . . . .	"	2'2	2'7	'78
" . . . . .	"	4'5	4'4	'8
Chronic mania . . . . .	"	3'1	—	'48
† " . . . . .	Male	3'4	4'1	'32

\* This specimen of brain was kindly provided by Dr. Spark, Medical Superintendent, L.C.C. Asylum, Banstead.

† The brain of infant which died three weeks after birth, the mother was pregnant when certified.

bulk of potassium nitrate and sodium carbonate mixture (two parts of potassium nitrate to one of sodium carbonate thoroughly mixed), and incinerate. The mass turns black, and if heated too rapidly crackles and sparks. When a hard, white cake forms at the bottom of the crucible, and no black particles remain, add the minimal quantity of water which will dissolve the substance (slight additional heat may be required).

Drive off  $\text{CO}_2$  with a small quantity of pure  $\text{HCl}$ , using pipette, and neutralise by liq. ammon. fort. Filter solution and add about half its bulk of magnesia mixture in the long tube. Shake for two minutes, and allow to stand for twenty-four hours. Remove most fluid above precipitate, agitate and pour fluid with precipitate into centrifuge tube.

#### *Lecithin.*

Place similar quantity of pulp in glass cup, and add 64 c.c. of methylated ether. Allow to stand for forty-eight hours, stirring several times, and filter into glass bottle. Allow bottle to remain uncorked (a filmy deposit will appear) until contents can be poured into crucible. Allow further evaporation to proceed until semi-solid (about twenty-four hours) and complete process on water-bath.

Phosphorus estimation from lecithin is similar to that from nucleo-protein, the incineration mixture and viscous lecithin being thoroughly mixed.

The process of bromination I have already described, and the method of determining the phosphorus content is the same as in nucleo-protein precipitate by acetic acid. 35 c.c. of the sod. carb. solution were taken, and the acetic acid precipitate dissolved by alkali before being placed in the Soxhlet tube for bromination. The resultant precipitate has been doubled to give corresponding results.

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(1) Abstract from M.D. Thesis, University of Edinburgh.

*Some Cases of Psychological Interest from Private Practice.* By J. E. MIDDLEMISS, M.R.C.S.Eng., L.R.C.P. Lond., late Assistant Medical Officer, Gartlock Mental Hospital, N.B.

As the cases which come under notice in the present paper are of a somewhat miscellaneous character, and as, moreover, no one of them could, by the widest interpretation of the term, be described as insane, one feels a certain hesitancy in contributing them to a journal avowedly devoted to psychiatry. Though varying in type, they have this in common, however—that there was in every case an underlying or concomitant mental factor which afforded a clue to the case, and the most reliable indication for the line of treatment to be adopted. Briefly they belong to the category of the psychoneuroses, and in the main were treated on psychotherapeutic lines. No uniform method was adopted, waking suggestion, persuasion, hypnosis, or the induction of a hypnoid state being utilised, separately or in combination, according to the exigencies of the particular case. Where necessary, it was supplemented by medicinal and general hygienic measures, but except in one case there was no attempt at psycho-analysis in the accepted sense. In most of the cases an attempt was made to induce hypnosis, but in Cases 3 and 6 it was only possible to attain what is called by American writers the hypnoidal or sub-waking state. In this state, according to Sidis (1), "Emotional excitement subsides, voluntary activity is changed to passivity, and suggestions meet with little resistance. The sub-waking state is above all a rest state, a state of physical and mental relaxation." The utmost that was obtainable in these cases was a condition of passivity, and of cessation from voluntary activity, in which there was increased susceptibility to suggestion, and which lacked many of the characteristic phenomena of true hypnosis. Whether this is merely a mild degree of hypnosis, or a condition *sui generis*, as Sidis contends, is not practically important, though in favour of the latter view it is to be noted that it is difficult to pass from it into true hypnosis even after many sittings. Nor is there the tendency to attain deeper stages of "sleep," which characterises the genuine hypnotic state. Apart from the increased suggestibility, the mere state of quiescence and tranquillity (which can be maintained for an

indefinite period) affords a valuable means of nerve recuperation where psychomotor unrest and anxiety are prominent symptoms. Thus it is particularly useful in typical neurasthenia, mild degrees of melancholia, and conditions in which the nervous energy is depleted, and where physiological rest is the primary requisite.

In this type of case it is not so much a question of correcting perverted ideas or eradicating an obsession, as of regulating the disordered functions of sleep, appetite, and motor activity until such time as the organism has recovered its equilibrium and power of adaptation. From the point of view of suggestibility the so-called sub-waking or hypnoid state is, in my experience, not nearly so efficacious as true hypnosis, but in many individuals is the best attainable, and is, moreover, quite sufficient for the purpose.

I propose to take the cases *seriatim*, commenting upon any special feature as I proceed.

CASE I : *A case of hysterical paralysis of both lower and one upper extremity.*—The patient was a married woman, æt 50. When first seen she lay most of her time in bed, was unable to dress herself, and had to be lifted out of bed and taken about in a bath chair. She had been unable to walk for two years, and for several years before that had only walked by the aid of a stick or crutch.

Some six months before I saw her she had lost the use of the left arm.

She was said to have suffered at various times from "gastric ulcer," "disease of the ovaries," "rheumatism," and "pleurisy." She attributed the weakness of her limbs to rheumatism and a "stroke" which had immediately preceded the loss of use of her left arm. She had been treated for "rheumatism" for years, but had gradually become more and more crippled. Examination showed that she was only able to make the merest movement of the left hand, but was quite unable to move the left arm or lift it from the bed. She kept it under the bedclothes, and moved it when necessary with the right hand. The left leg was even more helpless, and she was quite unable to lift the foot from the bed, to bend the ankle, or flex the knee. The movement in the right leg appeared to be pretty good, but was restrained and prevented by pain and rigidity. The right arm was normal.

There was no physical defect otherwise beyond a marked corpulence, due, no doubt, largely to inaction, and to her long stay in bed. There were no objective signs of arthritis or other organic condition, and the muscles were everywhere well developed.

Attempted passive movement, and gentle pressure on the affected parts caused pain, and there was marked cutaneous hyperæsthesia. The plantar and patellar reflexes were normal.

Treatment was conducted on the lines of suggestion, direct and indirect. It was explained to the patient that the condition was functional, and that, with perseverance and co-operation on her part, there was every hope of her complete recovery. Passive movements and massage were adopted, the joints being flexed and extended in spite of a certain amount of protest. The stiffness and rigidity were explained as being due to lack of use, and when pain and resistance were encountered the attention was distracted by conversation, and the difficulties made light of. A note made after some seven weeks of treatment, reads: "She is now able to lift the 'paralysed' arm to any height, to separate, flex, and extend the fingers, to grasp lightly, and hold objects in her left hand. She manages to arrange her hair, to dress herself, and to support the weight of her body whilst dressing. She can also sit erect in bed without conscious effort, and without the puffing and blowing which previously attended the slightest attempt at voluntary movement." The result was much slower in the case of the lower extremities, and it was resolved to try hypnosis. Unfortunately, both the patient and her family were very half-hearted about the treatment, and on that account, and because of my subsequent removal from the neighbourhood, the treatment had to be discontinued.

*Comments.*—This case illustrates the difficulty of treating these cases at home. It was easy to conjecture the genesis of the affection. Beginning with some slight functional disorder, rheumatism or neuralgia, this had become magnified and fixed until it had completely dominated her life. She had seen many doctors, and had been told by one that she would never walk again. She was emotional and exhibited religiosity, and derived a certain amount of pride from the magnitude of her sufferings, and her distinction as a remarkable invalid. The family unconsciously "played up to" this belief, and openly



expressed their scepticism as to any cure, frequently in her presence. They were, moreover, uneducated people of the mining class, and so constituted a very unpromising *milieu* for the practice of mental therapy. Three months' segregation of such a case in a suitable "home," with scientific nursing, and a free hand as to treatment, would, I am convinced, have told a different tale. The powerlessness of the physician, in the face of an antagonistic atmosphere, is here made very palpably evident, and only emphasises the need for suitable hospitals for these cases, which need I have pleaded elsewhere (2).

CASE 2: *Somniloquism in a girl*.—This patient was a country girl, æt. 17. She was a maid in my own employ. Otherwise healthy, she had had for some years a distressing habit of talking in her sleep. She would begin soon after retiring to rest, and would talk quite loudly at intervals throughout the night. The talking was so loud and startling that it became a source of annoyance to the family with whom she lived. She had been informed of the habit, otherwise she would have been quite unconscious of it. She had no recollection of talking when she awoke, but thought "she had dreamt a good deal." Other girls, her bed-fellows, had complained at times, and she was anxious to be cured if possible. She knew nothing of hypnotism, and on my first suggesting it was a little reluctant. She was soon reassured, and proved very susceptible. After a few sittings she became influenced, exhibiting complete amnesia, and carrying out post-hypnotic commands with the utmost facility. It was suggested to her that she would sleep soundly, and though she might dream, the dreams would be pleasant, and she certainly would not talk. The treatment was very successful, and although she would occasionally talk in her sleep, it became so negligible as to cease to disturb anyone. She had, perhaps, a dozen sittings altogether.

*Comments*.—Apart from the therapeutic aspect of the case, it was noted that during conversation in the hypnotic state the patient's intellectual faculties were decidedly stimulated. Ordinarily not of a very high order of intelligence, she would evince during hypnosis a faculty of *repartee*, and almost of wit, which was certainly no part of her waking equipment. Once, during her sleep, she was asked by an indiscreet lady visitor a rather embarrassing question. Quick as lightning came the reply, "Oh! Miss—. What a question to ask!"

somewhat to the discomfiture of the questioner. She could easily distinguish people's voices whilst "asleep," and even their touch. For instance, I would tell her to waken when touched on the elbow by an assistant, and she would take no notice when touched by myself or any other person, but would immediately waken when touched by the selected person.

CASE 3 : *Nervous tremor of head of many years' duration.*—The patient was a young man, æt. 28, tall and well set-up, and of good physique. Well-educated and intelligent, he had lately taken a college course in agriculture, but had failed to sit for his diploma. He complained of a peculiar shaking of the head, which affected him particularly when in company, or when placed in circumstances where such a habit would be noticeable. For instance, in the theatre, at church, or during an interview, it always came on. He admitted that it was very slight, that it was rarely, if ever, noticed by others, but he himself was always conscious of it, and invariably avoided circumstances which would accentuate it. He had been put to all sorts of contrivances in avoiding situations which might excite the habit. As an extreme instance, he mentioned that he refused to be taken in a group-photograph, and on one occasion where it had been impossible to avoid it, he had actually bribed the photographer, and secured and broken the negative, for fear the photograph should betray his hidden weakness. Apart from that, he had given up situation after situation because of his morbid sensitiveness on the point. In addition, he complained of restlessness which prevented him studying, or devoting his mind to any subject for a continuous period. He said that his life had been ruined by this nervous habit, and that he had consulted many doctors and tried such diverse treatments as massage and ju-jitsu, but only with temporary relief. He asked specifically to be treated by hypnotism, if I thought him a suitable case. When he consulted me he was looking for a post, and I came to the conclusion that his wandering from one occupation to another was not entirely due to his malady, but was certainly partly owing to his comparatively comfortable circumstances. One feels that if he had been compelled to stick to a post when once obtained, his trouble would have been avoided. He was conscious of a want of definite purpose in life, and described himself as being like "a derelict vessel, wandering hither and thither." He had worked at different

periods as a chemist's assistant, as assistant in a pathological laboratory, as insurance agent, as an agricultural student on a farm, and had studied agriculture at the university. He described himself as "more keen on agriculture than on anything else," but had never been able to concentrate his mind sufficiently to study for his diploma. He seemed to have considerable insight into his own condition, and, as he described it, had never done himself justice. During conversation he was continually fidgeting about in his chair. He said that he was unable to sit still for any length of time, and complained of "a feeling of tension," which was only relieved by movement. He was abstemious as regards alcohol, but smoked a good deal. I attempted to induce hypnosis at the first sitting, and succeeded in inducing the sub-waking condition which I have described above, in which there was complete mental and physical passivity, and a cessation of all voluntary movement. Subsequent sittings heightened the effect, and the quiescent state could be maintained as long as it was desired. Suggestions were given from the first. He was told that the tremor of the head would not disappear immediately, but that he would no longer be anxious about it, and it would be no practical detriment. He would no longer avoid any "embarrassing" situation, but would simply not take it into account. It was explained that after the anxiety had vanished, the symptoms themselves would disappear. The suggestion worked well, and the patient had altogether fourteen sittings. He was able to transact business, and keep his social engagements. He really made a serious attempt to get permanent employment at this time. This necessitated frequent interviews with responsible people, during which his malady remained quite in abeyance. Finally he emigrated to Canada, with the intention of taking up farming, and before leaving expressed himself with the utmost confidence as to the future, and said that the nervous trouble no longer inconvenienced him in any way.

*Comments.*—In this case, in addition to the suggestion directly combating the malady, I invariably emphasised the necessity of doing regular work, and pointed out that when his mind was braced and stimulated towards the attainment of a definite goal, the morbid obsessions would be diminished. It was explained that the affection was to some extent due to his

aimless and undisciplined mode of existence, but he was encouraged in the idea that, once he had a definite object in view, it would no longer prove an obstacle in the way. I am convinced that in a case of this sort mere symptomatic treatment of the malady by direct suggestion, without reference to an ordered scheme of life, would have no permanent result.

CASE 4 : *Bronchial asthma of over two years' duration occurring in a young married woman ; treated successfully by hypnosis* (3).—As this case has already been reported elsewhere, I shall briefly outline it here. When first seen she was six months pregnant, and attacks of asthma occurred two or three times a week. In addition there were partial aphonia, and various phobias, and the health was completely shattered by the long duration of the symptoms. Various treatments had been tried without success. Hypnosis was induced at the first sitting, and direct antagonistic suggestions were given from the outset. The attacks ceased from the commencement of the treatment, and up to now, some eight months since the patient was first seen, there has been no recurrence. The marked improvement in her general health is as striking as the cessation of the essential symptoms.

CASE 5 : *Insomnia due to a fixed idea*.—The patient, a young married woman, came to me complaining of sleeplessness. She was in great distress, and it was difficult to get her to talk about herself. It appeared that some six years ago the thought suddenly struck her "how awful it would be if I could not sleep." (It should be explained that she was unhappy at the time in her home circumstances, and only got relief in sleep.) Ever since the idea came to her she has been unable to sleep properly. Sometimes, when other affairs absorbed her attention, as the birth of her youngest child, she was not so much under the influence of the idea, but she never forgot it entirely, and remembered the exact day and date on which it first occurred to her. About this time she was left alone for many hours in the day, with only her child for company. She was accustomed to brood, and frequently sought solace in sleep. The idea that she could not sleep just struck her as an awful possibility. She wondered what would happen if this resource and escape from boredom should be denied her, and the fear of such a catastrophe operated so as to produce the very result so much dreaded. She does not appear to have suffered so



much from actual insomnia as from the feeling that she had lost the power to sleep at will. Apart from that she was "nervous" and sensitive, and not altogether happy in her home life.

Her husband "does not understand her," and gets impatient with her at times. After an outbreak of this sort she is upset for some time. She has only spoken of this to a married sister, who advised her to see a doctor. She did not think medicine would do her any good, "as her trouble was mental, not physical," and she was ashamed to speak of it to anyone for fear of ridicule. She has struggled against it without avail, and as soon as she came in burst into tears.

*Treatment.*—She was told to gaze at my scarf-pin until her eyes became tired, and then to close them. Whilst in the reposed condition I explained to her how the idea arose, and the cause of her fear, and that there were other methods of distraction besides sleep. I also gave her positive suggestions that she would sleep soundly, and would employ her leisure hours profitably and pleasantly. She was also told not to struggle against the idea, and that the fear of insomnia would vanish when she was relieved of her fear of solitude and boredom. At the second visit, three days later, she was much better, had slept well, and was easier in her mind. She especially remembered the injunction not to struggle against the idea, but just to believe that she would sleep. On this occasion she became alarmed at the onset of drowsiness. She was obviously very susceptible to hypnosis, but under the circumstances I did not proceed to induce it, but merely repeated the original suggestion after reassuring her.

Ten days later I got a note from her to say that she was quite well, and thought it unnecessary to come again. Two months later she came to see me. She had been better ever since the treatment, and although occasionally restless at night, had quite lost the obsession about not being able to sleep. She had always remembered "my explanation," and especially not to struggle against the idea, and had felt quite easy in her mind since.

*Comments.*—Here the recalling of the incident which occurred six years previously, the necessary unburthening of her mind on the subject, and the "explanation" of the mental processes which had culminated in her present disorder, seem to be the main

factors in her cure. In a case of this kind it is difficult to apportion the therapeutic value of each factor in the treatment, but it is improbable that suggestion alone would have been equally effective. Assuming a psychological explanation for the genesis of the complaint, the procedure adopted would appear at any rate to be more fundamental and more scientific.

CASE 6 : *Somnambulism in a young man*.—The patient, a young Jew, æt. 21, has suffered from somnambulism since puberty. The attacks occurred frequently, and caused distress and annoyance to the rest of the household, as well as to the patient himself. They were always worse after excitement, or any change in the customary routine, *e.g.*, sleeping in a strange bed, going away from home, or even altering the position of the bed would engender an attack. They were accompanied by great fear, and the patient would wander in his sleep to an adjacent room, and wake spontaneously in a state of terror. He had remissions of several months, but had always relapsed. He generally wakened the family by his cries and the noise he made, and his health had been affected by the habit. He was bright, alert, and intelligent, and of cheerful disposition. The condition was said to have dated from a fright in his early years, but the history was not clear on the point.

*Treatment*.—I attempted to induce hypnosis, but neither at the first attempt nor subsequently was I successful. It was found possible, however, to produce a quiescent state, in which there was complete muscular and mental repose. Suggestions were combined with an "explanation" of the probable cause of the affection, and the treatment to be employed. There was no loss of consciousness and no amnesia, but there was increased attentiveness and suggestibility. The suggestions were directed to the relief of anxiety, and he was told that the habit would diminish in frequency and in intensity, and would finally disappear. After five sittings, spread over a fortnight, the treatment was interrupted. There had been some improvement, but the patient had been much upset by the death of a near relative. Four months later he wrote to say he had been much better in the interval. There had been one or two bad attacks, but they were much less frequent. He has had two more sittings, with an interval of about six weeks. He still sits up occasionally in bed, but soon "comes to himself." The brother and father testify to the marked improvement. He is

at present occupying a rather responsible situation, which might have been expected to excite the attack. Although not free from the habit he no longer has any anxiety on this score.

*Comments.*—This case has not been sufficiently long under observation for a final pronouncement, but so far as it goes is encouraging. A noteworthy point is the apparently delayed effect of the suggestions. When the treatment was interrupted we did not appear to have made much headway, and I was a little surprised at the subsequent improvement.

*Conclusions.*—A consideration of the above cases, and others which have come under my survey, has led me to the following conclusions: Firstly, it is both unwise and unscientific to approach a given case with a prejudice in favour of any particular form of mental therapy. The treatment adopted should be tried on its merits, and from the point of view of its adaptability to the particular case, and not in accordance with any preconceived ideas on the part of the physician (4). There is a tendency at the present time to draw unfavourable comparisons between pure suggestive treatment and treatment by psycho-analysis. The former is regarded as being merely temporary and symptomatic, whilst psycho-analysis, according to this view, is the only one which goes to the root of the disease, and may truly be regarded as scientific. Although the future may prove this assumption to be well-founded, I submit that at the present juncture, when the whole subject of psycho-therapy is, so to speak, *in embryo*, it is premature to arrogate such claims in favour of any particular procedure. Apart from the fact that the multiform aspects of a functional neurosis may demand separate consideration, the various "psychic" methods are not yet so standardised, and so accurately delimited, as to warrant their exclusive use in a particular case. While one or other may be prepotent, and specially indicated in certain circumstances, a synthetic application of psychological principles is more consonant with the present state of knowledge, and more generally useful. Another point which is more or less related to the above is the importance of considering these affections in relation to their mental context. If it be important to study the personality of the patient, and the general life-setting, in the true psychoses, as a recent writer (5) has ably contended, in conditions, that is, which are relatively crystallised and developed, it is all the more so in dealing with a symptom-

complex which is plastic, unformed, and, so to speak, *in posse*. Here, if ever, the patient is more than the disease, and a symptom survey which takes into account the mental complexion of the individual, and his reaction towards life, will often elucidate problems which otherwise remain recondite and inexplicable. It is only when viewed in relation to the general life-scheme of the patient, and against the background of his normal mentality, that many apparently negligible factors assume their true significance. Just in so far as they are seen in their proper co-relation can the treatment be regarded as effective and scientific.

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*The Rôle of Hypnotics in Mental Diseases, with Indications for their Selection and Employment.* By RICHARD EAGER, M.D., Aber., Assistant-Medical Officer, Devon County Asylum, Exminster.

Sleep, gentle sleep,  
Nature's soft nurse, how have I frightened thee  
That thou no more wilt weigh my eyelids down  
And steep my senses in forgetfulness?

*Shakespeare.*

I FEEL I should preface my paper on “The Rôle of Hypnotics in Mental Diseases” by the statement that you will merely find in it a collection and corroboration of well-known facts. These facts, however, have been brought together in a form



in which I have not been able to find them elsewhere, *viz.*, such as will aid in pointing out the indications for the employment of the different hypnotics, and the types of mental disease in which certain of the drugs appear to be especially useful.

I have put the drugs mentioned to practical tests, and made records of their hypnotic action by careful observation. In this I have been greatly assisted by the kindly co-operation of the male and female nursing staff of the Devon County Asylum, to whom I am greatly indebted.

It will aid to clearness if we consider the subject under the following headings:

(1) THE NECESSITY FOR SLEEP TO MAINTAIN BODILY  
AND MENTAL VIGOUR.(1)

It would be difficult to over-estimate the importance of sleep to the human race. To the brain-worker, no less than to the athlete, it is essential. We are all of us aware of the beneficial effects of sleep in slight as well as serious bodily ailments, and it has well been called by Shakespeare "Nature's soft nurse." Loss of sleep is one of the commonest and most serious symptoms of mental disorder. It has often lasted a considerable time before the patient comes under our treatment and is in itself, in some cases, an important factor in the cause of the mental trouble, and in others an early symptom, the significance of which is not sufficiently appreciated. Patients have been known to die from want of sleep, and, in view of the grave results which may, and often do, follow disturbance of this function, it is our duty as alienists especially to inquire into the means at our disposal for the treatment of sleeplessness.

(2) SLEEPLESSNESS MAY BE DUE TO MANY CAUSES.

In this connection it is well to remember that, although our work mainly leads us to consider pathological and functional changes in the brain, we are not on that account absolved from the examination of the physical condition of our patients. The insane are liable to any of the common diseases of general occurrence, and, indeed, are frequently prone to certain of these, notably tubercle, and whilst the perception of pain in many

patients the subjects of mental disease is undoubtedly blunted, in others it may be exaggerated, and produce grave effects accordingly. We must recognise that inability to sleep may have its origin in pain,(2) acute fevers, a feeble circulation, or practically any bodily disorder. The physical effects of a long journey, a strange bed, unaccustomed noises, and over-fatigue are familiar to us in upsetting repose. In those of a neurotic temperament, a sudden emotion, a bereavement, anxiety, delay in the receipt of expected news, or a fancied slight may easily produce sleeplessness. The financier, although often considered to be a man of iron nerve, may have his night's rest hopelessly broken by money losses.

Again sleeplessness in those the subject of mental disease is of very common occurrence, and is no less worthy of our attention.

### (3) THE IMPORTANCE OF INVESTIGATING CAUSATION.

If we accept the dictum "*Mens sana in corpore sano*," we shall easily appreciate that the cause in any given case of sleeplessness must be carefully searched for.

We have come to recognise that many of the functions of various organs in our bodies are interdependent. Should one organ become deranged or modified in its action remote effects may follow, and if the cause is not recognised, we shall make but poor progress in treatment. There is a large class of patients, often with a bad family history as regards insanity, whose nervous systems are easily thrown off their balance by comparatively trivial matters. In such people loss of sleep may be productive of serious results, yet the cause may be one that is easily removed. In certain cases, the investigation of the habits of the patient may reveal the abuse of alcohol, tobacco, tea, etc., in others it may be injudicious diet. We may also require to ascertain the patient's occupation, and at times to recommend a change of work or a holiday.

It must be the aim of the general practitioner fully to realise that a careful examination of the physical condition, and any idiosyncrasies of his patient in any given case of sleeplessness, is of the greatest moment, and that further advice should be sought in cases of a neurotic temperament in which relief is not speedily obtained for this distressing condition.

(4) CONSIDERATIONS TO BE WEIGHED IN EMPLOYING  
HYPNOTICS.

If we are unable to discover any removable causative factor in the physical or mental condition of the patient in a case of sleeplessness, we have to consider what can be done. I do not propose entering into a discussion as to the merits of inducing sleep by suggestion, hypnotism, massage, or hydrotherapy. They do not come within the scope of this paper, though I believe they are all valuable means of inducing sleep, when in proper hands. I therefore propose to limit my remarks to the subject of hypnotics.

Hypnotics are medicines of varying composition and action, which on administration produce effects as nearly as possible resembling natural sleep. Certain of these agents are comparatively harmless in single doses, others exert powerful influence on the heart or upon other systems of the body. Again, some of these substances produce cumulative effects after repeated doses, which may be due on the one hand to insolubility, or to the slowness with which they are eliminated, whilst others, if taken repeatedly, cause a craving for the drug.

Other points to be considered in making the selection of a hypnotic would be :

(a) *As regards the Patient.*

(1) *Age.*—One would consider the age of the patient, remembering that the dose prescribed would have to be altered accordingly, and also the fact that some hypnotics are contra-indicated in children especially, whilst others are unsuited for those with advanced years and senile changes.

(2) *Bodily condition.*—It is of importance that one should know the state of the heart and blood vessels, lungs and kidneys, for there is danger of using certain hypnotics where these organs are diseased. It would be unwise to prescribe a cardiac depressant for a patient with heart disease, or an irritant to the lungs in cases of bronchitis, or possibly pulmonary tuberculosis. Again, where the kidneys are affected one would avoid a drug which is excreted with difficulty.

(3) *Mental condition.*—My intention is to mention the mental condition for which I consider the various hypnotics most suit-

able when discussing the individual drugs seriatim, but here I would mention that sleeplessness may accompany a great variety of mental states. It is frequently present in melancholia, an almost universal symptom in mania, and very common also in general paralysis of the insane and senile insanities.

(b) *As regards the Drug.*

(1) *Its administration.*—Certain drugs present difficulty in administration owing to their extremely objectionable taste or smell. They are, therefore, at times refused by patients for whom they are prescribed. Others present difficulties owing to their insolubility, and others again leave behind unpleasant after-effects, such as a disagreeable odour to the breath, headaches, etc.

(2) *Its rate of action.*—This varies considerably with most hypnotics. It varies according to the class of case for whom it is prescribed, and also according to the dosage. Some hypnotics act very quickly, others take four or five hours to produce their effect, and in some cases this is prolonged to the following day.

(3) *Its cost.*—Whereas in the administration of single doses the cost hardly enters into the question, in large institutions, where hypnotics are frequently required, the question of cost is a serious factor.

If we have decided, then, that a hypnotic must be employed, we have to give due attention to all the points already mentioned, and we shall find that much judgment and discrimination are needed in prescribing these drugs.

(5) HYPNOTIC DRUGS.

In turning our attention to the various hypnotics one is struck by their great number. No useful purpose would be served by giving a complete list of all the hypnotic drugs at present on the market, if that were possible. I will therefore confine myself to the following, the action of which I have had opportunities of testing :

(1) *The alcohol group.*—Alcohol, paraldehyde, amylene hydrate, chloral hydrate, butyl chloral hydrate.

(2) *The sulphonal group.*—Sulphonal, trional, petronal.



- (3) *The meide group*.—Veronal, luminal, adalin.
- (4) *The bromides*.
- (5) *Opium*.
- (6) *Hyoscine*.
- (7) *Cannabis indica*.

*Alcohol*.—When given under skilled advice, and in carefully selected cases, alcohol is a useful hypnotic. It is especially valuable in patients with advanced cardio-vascular degeneration, in those cases in which the sleep is prevented by a feeling of coldness. In these patients the circulation is lowered, and during sleep may therefore be insufficient to maintain the bodily heat, especially in the extremities. The use of alcohol as a "night-cap" in such a case is most beneficial, and even in cases showing extreme degrees of restlessness, I have found it act like a charm. It might be used more widely with advantage in senile cases of restlessness and insomnia, but cost is against this in a large institution and the habit is very easily created.

*Paraldehyde*.—In cases of mild maniacal excitement I have found paraldehyde of considerable use, but after repeated administration its action becomes diminished, and it is advisable to substitute some other drug for a period.

It is a safe hypnotic, and as regards the heart it acts as a stimulant. Elkins reports the case of a man, æt. 63, who took 16 oz. of paraldehyde in one week, and recovered from its effects.

Its very objectionable taste and smell is one of its great disadvantages, and it is occasionally refused by patients. It also imparts a very disagreeable odour to the breath on the following day during its process of excretion.

It is contra-indicated in cases who are subject to emphysema or bronchitis, for the drug is in large measure excreted by the bronchial mucous membrane, and acts as an irritant during this process.

Of all hypnotics it is the one in which a drug habit is least likely to be acquired.

It is one of the cheapest of this class of drug.

In over one hundred cases taken indiscriminately in which paraldehyde had been administered in 2 drachm doses by the mouth, the average period that elapsed before sleep was thirty minutes, and on an average five hours sleep followed.

*Amylene hydrate*.—This drug is very closely allied to paralde-

hyde. Its taste is less objectionable, and its odour resembles camphor. It is of use in the same class of cases as paraldehyde, and is rather more powerful in its action. It has no unpleasant after-effects and is recommended where hypnotics are required over long periods, but it works out at about six times the cost of paraldehyde, and is one of the most expensive hypnotics on the market.

The period that I find elapses before sleep after 1 drachm of amylene hydrate is on the average one hour, and this dose will generally produce five hours' sleep. An average of six hours' sleep was produced by a dose of  $1\frac{1}{2}$  drachms, which took thirty minutes to produce hypnosis. These results are based on my observations on the action of the drug in fifty cases.

*Chloral hydrate.*—This drug is a powerful general depressant. Its action is exerted chiefly on the cerebrum, but the respiratory centres and heart are also stated to be affected by large doses.

It is a useful hypnotic in cases of melancholia, and I have found it especially so combined with bromide, which seems to prolong its action. I have found 20 gr. of chloral combined with 1 drachm of pot. brom. acts beneficially in most cases of sleeplessness with depression.

The much-advertised "Bromidia" is a combination of chloral hydrate, bromide, cannabis indica, and hyoscyamus. For the status epilepticus, and repeated congestive attacks of general paralytics I have found a combination of chloral hydrate, bromide, and morphia invaluable.

Chloral is very easily taken, and a "habit" is very easily established. Chloral together with paraldehyde are the cheapest hypnotics for use on a large scale.

Given in doses of 25 gr. I have found from observations on seventy-five separate cases the average period of sleep to be six hours, and the average time before sleep is induced to be forty-five minutes.

*Butyl chloral hydrate.*—This drug acts in a similar way to chloral hydrate, but is less powerful and less certain. It is not of any practical value as a hypnotic in mental cases, though I have found it occasionally succeed in instances in which sleeplessness is associated with facial neuralgia.

*Sulphonal.*—Sulphonal is useful in cases of old standing motor excitement, and I have also found it of considerable service in senile dementia. The drug is very slowly excreted and has

experimentally produced nephritis in animals, but it is not a cardiac depressant. I have come to believe that many of the intestinal symptoms and cases of diarrhoea met with in asylum work are the result of irritations set up in the bowel by the insoluble crystals of sulphonal in its usual form. As supplied by Messrs. Bayer & Co. it is in the form of a tasteless and odourless powder and I think this is preferable. Another effect of sulphonal administration is hæmatoporphyrinuria. It is, fortunately, of rare occurrence, for it is a symptom of grave import. Hæmatoporphyrin is an iron free derivative of the hæmatin of the blood, and its presence in the urine is to be considered as a danger signal. The condition is frequently associated with vomiting, diarrhoea, and pains in the joints and abdomen. In severe cases the patients pass into a state of collapse, and death occurs at an early period (3). Such a train of events, however, must be very rare in asylum work, where all patients are under medical supervision.

Prior to the administration of sulphonal the urine should be examined, and the nurse should receive instructions to carefully notice any tendency for the patient's urine to turn a reddish colour, and occasionally measure the quantity passed in twenty-four hours. The bowels should also be kept well open during the administration of this drug.

Sulphonal is contra-indicated in melancholia, on the grounds that the secretions are all very deficient in such mental conditions, and the patients suffer from gastritis and constipation.

The action of sulphonal is slow, but cumulative, and it requires to be given several hours before its effect is desired. The average period that elapsed before sleep after the administration of 30 gr. in a hundred separate cases was four hours, and on the average seven and a half hours' sleep followed.

The sulphonal habit is not common.

*Trional*.—This drug acts rather more quickly than sulphonal, but, like it, may produce hæmatoporphyrinuria.

It was recommended in the same class of cases as sulphonal, but has now been discarded by most alienists on the ground that it produces degeneration of the neurones (4). It has the reputation, however, of being of use in cases of chorea, and I have seen considerable benefit from it in this condition associated with mental trouble. It is rather more expensive than sulphonal.

*Tetronal*.—It is more toxic and even less soluble than

sulphonal. It is also very expensive, and therefore has nothing in its favour.

*Veronal.*—This drug is useful in early cases of mental disorder of the maniacal type, but not so efficacious as sulphonal in chronic cases.

The drug is very apt to produce a habit (5). The taking of veronal has become more common amongst the public since the Hove case (6), and in several instances there is little doubt that the idea has been prompted by reading the newspaper accounts of this case (7). Cases have been recorded as developing all the clinical signs of acute pneumonia under its administration, and it is important to know that it is quite easy to mistake a severe case of veronal poisoning for pneumonia (7 and 8).

Veronal is best administered in warm milk half an hour before bed-time, but should be avoided in cases with renal disease.

Its rate of action is quicker than sulphonal, and I have found that the average period that elapses before sleep after the administration of 10 gr. is forty-five minutes, and that an average of five hours' sleep follow.

It is rather more expensive than sulphonal, but a substitute, under the name of "Malourea," works out at about the same price.

Veronal-Sodium or Medinal is said to act quicker, and with more certainty than veronal, and its effect is said to be best obtained by administration in the form of suppositories (9), but I have had little experience of its action.

*Luminal and Luminal-Sodium.*—This is a very powerful hypnotic, which is useful in cases of intractable restlessness and excitement. I have found it produce sleep in doses of 10 gr. in cases where paraldehyde, chloral, and sulphonal all failed. Its sedative influence is often prolonged, and it also acts in cases in which sleeplessness is associated with pain. In epilepsy, where the bromides are unsuccessful in reducing the number of fits, its employment has met with considerable success. I do not consider much good will result however from the administration of anything under 10 gr. I have seen no bad effect from its administration; in fact the day following the patient has seemed considerably clearer and better mentally.

It acts fairly rapidly. The average period that elapsed before sleep after 10 gr. of luminal had been administered in



forty cases was one and a half hours, and on the average ten hours' sleep followed.

I have also used Luminal-Sodium hypodermically in 20 *per cent.* solution. The large quantity required for a dose (*i.e.*, 2 c.c.) is, in my opinion, an objection to its facility for injection in maniacal cases, though I am informed that the 20 *per cent.* solution is the ideal one for absorption. In status epilepticus I have found it succeed in checking the fits where all other drugs have failed. In combination with apomorphine it has been recommended as especially useful in delirium, the result of alcoholic excess.

Luminal is, unfortunately, one of the most expensive hypnotics. No cases have been recorded of the "luminal habit."

*Adalin.*—It is claimed for this hypnotic that it occupies a place between the powerful hypnotics on the one hand, and the mild unreliable sedatives on the other. It is well tolerated by the stomach, and seems to have no injurious action on the heart.

Where there is much mental or motor excitement I have not found much benefit from its administration, but in the sleeplessness of melancholia it has given good results, also in cases with arterio sclerosis and dementia præcox. It has not produced any unpleasant after-effects in the cases in which I have tried it. I think it should prove useful in early cases of mental trouble prior to admission into an asylum, where the bromides have failed to produce sleep.

Given to thirteen cases in 15-gr. doses the average period of sleep produced was six hours, and it took on the average one hour to act. In three cases doses of 10 gr. had no effect.

*The bromides.*—Epilepsy is the condition in which this drug has its most extensive use, and it is thought that it acts by allaying the irritability of the motor areas of the cortex. The combination of the potassium, sodium, and ammonium bromide, seems to me to give better results than a similar dose of any single salt. In combination with chloral hydrate and morphia I have found it invaluable for the status epilepticus, and the epileptiform convulsions of general paralysis as already mentioned.

I have found potassium bromide of considerable use in cases of climacteric insanity, and the sleeplessness associated with the

menopause, especially in combination with Tr. opii. In the early stages of mental disease, when morphia is so frequently resorted to by the general practitioner, and in cases of neurasthenia, I believe much good could be done by the more frequent trial of the bromides. On the other hand, excepting for the class of epileptics, bromides are not of much use after a patient has passed into the chronic stage of mental disorder.

The cost of the bromides is very small, but it is to be remembered that very large quantities are usually found necessary in asylum treatment.

*Opium.*—I have found this drug of considerable service in alleviating the symptoms in cases of agitated melancholia, administered as a medicine three times a day in gradually increasing doses. This is especially the case in women about the time of the menopause. It is chiefly to be relied upon as a sleeping draught in the form of morphia, when pain is the cause of sleeplessness, and in cases of "confusional insanity," when the patient is in a very exhausted condition. Morphia combined with chloral and bromide administered in the status epilepticus seems to me to induce the hypnotic action quicker than when this drug is not employed. It is of little or no use in maniacal excitement, or any form of early mental trouble. The dangers of prescribing it in children, and in chronic interstitial nephritis and heart disease, should be remembered.

Its great disadvantage is that it soon loses its effect on repeated administration. The patient very readily becomes accustomed to the drug, develops a craving for it, and cannot do without it; in fact there is no drug which conduces so readily to the drug habit. The United States Public Health Service in their recent report on the laws and regulations relating to the use and sale of poisons, estimate that of the 400,000 pounds of opium imported annually, 75 *per cent.* is manufactured into morphia, of which 80 *per cent.* is used by victims of the habit (10).

*Hyoscine.*—Given in the form of the hydrobromide, hyoscine is a powerful depressant, and exerts this depressing action also on the heart.

It is useful in extreme conditions of maniacal excitement in strong healthy people, where one wishes to obtain the influence of a hypnotic as quickly as possible, for given by hypodermic injection it is very rapid in its action. It is also of use in the

wild maniacal attacks which occasionally occur in cases of general paralysis of the insane, in the early stages of that disease. I have given as much as  $\frac{1}{80}$ th of a grain subcutaneously to a patient with benefit, and in fact if benefit is to result, I consider large doses must be used. The drug is also of service given in doses of  $\frac{1}{100}$ th of a grain three times a day by the mouth in milder cases of excitement, and, combined with atropine and morphine, it serves as a useful sedative in cases of delirium tremens. It should not be given to persons over middle age, or to anyone who is not in robust health.

The quantities of hyoscine and morphia used for hypnotic purposes are so small that their cost is negligible.

*Cannabis indica*.—This drug has been recommended in cases of chronic maniacal excitement, but I have been unable to find that it has any special advantages over other drugs at present obtainable. Further, it is unreliable if kept for any length of time, and liable to become oxidised and inert.

#### (6) GENERAL CONSIDERATIONS.

##### (a) *Method of Administration.*

(1) *By the mouth*.—Most hypnotics are capable of administration by the mouth. Paraldehyde, however, presents several difficulties. In the first place it is not readily miscible with water as a vehicle. It may, however, be partly emulsified with Tr. Quillaia, and Lane is in the habit of prescribing it in doses of 2 drachms as a draught with 1 ounce of water to which is added 10 minims of the tincture. Amylene hydrate may be similarly emulsified.

Sulphonal is a most insoluble drug, and is best given in hot milk in doses of 15 to 30 grs. Half a pint of milk will dissolve 20 grs., and the addition of alcohol slightly aids its solution. It may also be spread on bread which is held in front of the fire. This melts the sulphonal, and butter spread over will retain it. It is a useful method in those cases who refuse medicine. Luminal is best given in hot tea or milk. Bromides should be prescribed with plenty of water, otherwise the free bromine will upset the digestive organs when given for lengthy periods to be taken three times a day.

(2) *Rectal administration*.—Paraldehyde, again, owing to its

objectionable taste and smell, is frequently refused by the patient. In this case, if necessary, it may be administered *per rectum*. In the status epilepticus where one is unable to administer any drug orally, chloral hydrate given per rectum in doses of 25 grs. combined with drachm doses of bromide and 20 minims of liquor morph. hydrochlor. has seldom failed to check the fits. It is probable that the morphia starts the action, which is carried on by the chloral, and further prolonged by the bromide.

(3) *Hypodermic medication*.—Where pain is the cause of the sleeplessness, a hypodermic of morphia is the best means of producing sleep. Injected subcutaneously it acts more rapidly, and in smaller doses, than when swallowed. In confusional insanities, when the patient is in a very exhausted condition, it is also certainly of benefit. By producing refreshing sleep in such a condition a patient may be helped over a very critical stage of his illness. Hyoscine requires to be given by hypodermic injection owing to the fact that in most cases for which it is recommended it is quite impossible to administer any medicine by the mouth. Luminal sodium is a preparation which is recommended as a hypodermic hypnotic in a 20 *per cent.* solution, which is said to be the ideal one for absorption, but I find that its great disadvantage is the large quantity required for injection.

(b) *Dosage and Time of Administration.*

The dose administered should be carefully selected to meet the requirements of each case. The dose I have found most useful has been mentioned already when dealing with the individual drugs. I would, however, add here that with regard to the bromides in epileptics, we may start diminishing the dose when the convulsions are diminished in frequency or severity. But the result must be carefully watched, and any increase in the frequency of the fits is a sign that the dose must be increased again. The drug must be used for long periods, with only occasional (quarterly or monthly) interruptions, before any reduction of the dose is attempted. If too much bromide is being administered the well-known signs of bromism develop, such as mental heaviness, difficulty in answering questions, or concentrating the attention, foul breath, bad teeth, and acneiform eruptions.



In the cases of climacteric insanity, in which I have already mentioned the benefit of bromide and opium, I find that a gradual increase in the dose of opium, and a similar reduction with signs of improvement gives the best results. I consider that all hypnotics should be given after the patient is in bed, and under the most favourable conditions for the drug to produce its effect. The action of sulphonal, however, is so much delayed that if given late in the evening it is not uncommon for the patient to spend a restless night, and sleep most of the following day. Probably the best time for its administration is at tea-time (4-5 p.m.), if the effect is to be obtained the same night.

(c) *Class of Case most often requiring hypnotics.*

In studying the records of over 350 consecutive male and female admissions to the Devon County Asylum, I have found that the majority of cases demanding "sleeping draughts" during the first few weeks of admission are cases of maniacal excitement. The cases next most frequently requiring hypnotics are those of senile dementia. I consider that paraldehyde is the first drug to try in the former instance, provided that there is no contra-indication in the physical condition of the patient. But if such contra-indication existed I should resort to veronal in early cases, and sulphonal in cases with a history of long duration, after an examination of the patient's urine had proved the absence of renal disease.

In the latter cases of senile dementia I have found sulphonal the best hypnotic, if given sufficiently early in the evening, in the more intractable forms of sleeplessness met with in this condition, but in the milder forms I have found hot drinks or stimulants produce a night's rest.

Where these drugs fail, I consider we have a valuable hypnotic to fall back upon in the form of luminal or luminal-sodium.

(d) *Contra-indications.*

Paraldehyde should not be prescribed to patients with bronchitis or respiratory trouble, owing to the fact, already mentioned, that the drug is an irritant to the bronchial mucous membrane. In old patients with emphysema, bronchitis

is very readily set up by its administration. I have known bronchitis to follow its too prolonged continuous use in a girl, æt. 26.

Most hypnotics, except morphia, are useless where pain is the cause of the sleeplessness. Luminal, however, is one exception, and there are some conflicting statements concerning the influence of chloral hydrate in this direction. I am of opinion that if the pain is too severe to permit of sleep chloral fails to give relief.

Where sleeplessness occurs in a patient with nephritis, sulphonal and morphia are to be avoided. It is well also to avoid using morphia in patients suffering from heart disease, except under special circumstances.

#### (7) SUMMARY AND CONCLUSIONS.

The following table shows the relative value of the different hypnotics when taken by the mouth in the doses mentioned :

Hypnotics.	Dose.	Time taken by the drug to induce hypnotic action.	Hours of sleep resulting.	Cases in which the drug is recommended.	Cases in which the drug is to be avoided.
Paraldehyde .	2 drm.	$\frac{1}{2}$ hr.	5	Maniacal excitement	Emphysema and bronchitis.
Amylene hydrate	1 drm.	1 hr.	5	Maniacal excitement	—
Luminal . . .	10 gr.	$1\frac{1}{2}$ hr.	10	Where other hypnotics have failed to produce sleep	—
Veronal . . .	10 gr.	$\frac{3}{4}$ hr.	5	Early stage of maniacal excitement	Renal disease, and where a habit is likely to be set up.
Adalin . . .	15 gr.	1 hr.	6	Early cases of melancholia; also in sleeplessness associated with arterio-sclerosis	—
Chloral . . .	25 gr.	$\frac{3}{4}$ hr.	6	Melancholia	Heart disease.
Sulphonal . .	30 gr.	4 hr.	$7\frac{1}{2}$	Chronic excitement, and senile dementia	Nephritis.

From the point of view of the alienists hypnotics are to be considered very important drugs, but the enormous number at present in use, from which I have only made a selection of those I have found most useful, clearly shows that we

have yet to seek a satisfactory and efficient drug. I consider that the use of hypnotics is to be avoided, if this is in any way possible, and that the removal of all probable causes that are preventing sleep is of the utmost importance in considerations as to their employment. In many cases the giving up or change of work, and adoption of some special treatment by those therapeutic measures suited to the case, will suffice to produce sleep and save a mental breakdown. Very few persons who are not of a neurotic temperament suffer from sleeplessness, and it is to be remembered that loss of sleep itself is one of the earliest signs of impending mental trouble in very many instances. I do not wish it to be concluded that I consider we can do without hypnotics, for, on the contrary, I prefer to use them rather than allow my patients to die from want of sleep and exhaustion. I believe that hypnotics when intelligently employed may avert the onset of mental trouble, but in cases in which they are resorted to it must be remembered that this is only part of the treatment. Efficient nursing must be an accompaniment to all hypnotics. There must be no noise, the bed must be properly made, the ventilation of the room attended to, and the light subdued. No patient should receive a nightly sleeping draught as a matter of routine. The dosage should be interrupted by making frequent trials to see how the patient will sleep without the draught. In many senile cases it will be found that the sleeping draught can be dispensed with if a hot drink is administered, the face and hands washed, and the bed made comfortable. Attention to the bowels is of the utmost importance. In mental cases sleepless nights are not infrequently complained of when it is known that the patient has slept the whole night through. It is not wise, therefore, to trust too much to the patients' statements in these cases, but preferably to gather reliable information by careful observation.

In conclusion, I wish to point out the growing evil caused by facilities which exist enabling the public to procure hypnotic preparations. It should not be possible for this to be done without the authority of a prescription from a duly qualified practitioner. Further, when prescriptions of hypnotic preparations are handed to a patient the number of times it is to be repeated should be specified thereon by the prescriber, and each time the hypnotic is dispensed the chemist ought to sign and date the prescription. This course I advocate, remember-

ing that hypnotics in a large number of persons are calculated to give rise to a craving for their continued use.

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#### *The Relationship between Epilepsy and Tuberculosis.*

By B. HENRY SHAW, M.B., Senior Assistant Medical Officer, County Mental Hospital, Stafford.

IN their report on this Asylum for 1913, the Lunacy Commissioners state: "Almost 20 *per cent.* of the patients in each of the Staffordshire asylums are epileptics; this unusually high proportion appears to obtain in each of the Staffordshire asylums, and to be a subject worthy of further inquiry locally." It is also noteworthy that associated with this high proportion of epileptics is a high tuberculosis death-rate, *viz.*, 25·2 *per cent.*, the average epileptic percentage of the number of patients remaining at the year's end in county and borough asylums in England and Wales being, for 1911, 12·5, while the proportion of tuber-



cular deaths *per cent.* of deaths from all causes (1902-1911) is 16.6.

In the Commissioners' report (1913) on Wittingham Asylum, Lancashire, they state: "We notice that the percentage of epileptic patients in the Asylum at the beginning of the year was only 9.2—as compared with 12.8, the average in asylums—and to-day it was about the same. From what we know of the epileptic insane in the Lancashire workhouses, we fear that these figures cannot be taken as any evidence of the immunity of the county from this disease." In view of the fact mentioned, and also that other insane persons are retained in workhouses, it was considered advisable to ascertain these numbers so that they could be correlated with those in this Asylum, and I have to thank the clerks to the various local unions for kindly supplying me with such information.

Leaving out the unions of Lichfield and Cannock, as the majority of their cases go to Burntwood Asylum, and dividing the remaining unions into industrial (comprising the unions of Wolverhampton, Dudley, and Stourbridge) and rural areas (comprising those of Newport, Uttoxeter, Stone, Seisdon, and Stafford), the following table shows the number of male and female epileptic and non-epileptic insane persons in the asylum and workhouses and the population of such areas:

	In Asylum.				Total both in Asylum and workhouses.			
	Non-epileptic.		Epileptic.		Non-epileptic.		Epileptic.	
	M.	F.	M.	F.	M.	F.	M.	F.
Rural areas, population 108,433.	96	98	15	14	108	109	18	16
Industrial areas, population 308,466.	309	279	57	77	387	370	108	132

Taking the percentage of epileptics on the total number resident of each sex belonging to the different areas, we get the following:

	Asylum.		Asylum and workhouse.	
	M.	F.	M.	F.
Rural areas . . . . .	13.5	12.5	14.3	12.8
Industrial areas . . . . .	15.4	21.6	21.8	26.2

These figures, which were compiled in mid-summer, 1913, show that at that time the percentage in the Asylum of epileptic patients from these unions was 20·8, whereas the average for England and Wales, as pointed out by the Commissioners, is 12·8. It will be seen from the above analysis that our excessive ratio is due to the industrial districts, and that urbanisation tells, as far as epilepsy is concerned, more on the female population than on the male, the returns from the rural areas showing a smaller proportion of female than male epileptics. Dr. Hamblin Smith very kindly informs me that since he took over duty as Medical Officer of Stafford Prison in September, 1911, the total number of prisoners admitted have been: males, 5313; females, 965; of these, 13 males and 2 females were epileptic, and of 165 cases reported as feeble-minded, 2·4 *per cent.* were epileptics. He is of opinion also that the number of epileptics admitted to Stafford Prison is markedly less than obtains in other prisons where he has been medical officer; whether this signifies that the mental reduction associated with epilepsy is greater in degree in this neighbourhood than elsewhere, or whether the insanity associated with epilepsy is more readily recognised, one can only conjecture.

The following table shows the proportion of deaths per 1000 living at subjoined ages in Staffordshire (urban and rural aggregates) and Wolverhampton:

		0-5.		5-10.		Over 10.
Staffordshire	{ M.	49·1	.	3·4	.	1·6
	{ F.	40·0	.	3·5	.	2·0
Wolverhampton	{ M.	54·8	.	4·3	.	2·6
	{ F.	46·3	.	3·1	.	1·6

from which it is apparent that in Wolverhampton at the ages when epilepsy becomes established there is a relatively greater male death-rate than obtains for females, as compared with the county totals. This difference is really greater than appears, as the Wolverhampton figures are included in the averages for Staffordshire, but the fact that more females relatively to males survive in Wolverhampton at the ages when epilepsy develops is significant, also the fact that tuberculosis universally in early childhood is more fatal amongst boys than girls, the total figures for England and Wales being respectively 4,805 and 4,072 under the age of five. These facts go far to explain our excessive

female epileptic ratios, bearing in mind the relationship between epilepsy and tuberculosis to be referred to later.

In order to help in throwing some light on the cause of our excessive epileptic incidence, I have reviewed the histories of 151 epileptic females admitted to this Institution during the past ten years, 1904-1913, all of which came directly under my observation. During this period there were in all 1,174 female patients admitted, of which number there were from the industrial and rural areas above-mentioned 756 and 351 respectively, the corresponding number of epileptics being 114 and 30—giving a proportion of 8.54 *per cent.* of epileptics on the total number admitted from the rural area, the corresponding urban figures being 15.08. Taking the total number of epileptics admitted during this period (1904-1913) the percentage on the total admissions is 12.8. The corresponding percentage for England and Wales for the period 1907-1911 is given in the Commissioners' Report as 6.6. My colleague Dr. Bennett, has very kindly examined the male admission records here for the same period (1904-1913), and informs me that the percentage of male epileptics to total number admitted works out at 11.4, the corresponding average for England and Wales being 9.2. These figures afford, therefore, further proof of our special indebtedness in this district to the female sex for our excessive epileptic population, the male epileptic admission rate for the ten years 1904-1913 being 2.2 *per cent.* above the average, while the female rate is 6.2 above—practically double the average. As to the causation of this I will have more to say later, but the following table gives the etiological factors ascertained in the 151 epileptic female admissions, together with certain associated states:

Insane heredity :	Paternal . . . . .	12	} 43
	Maternal . . . . .	14	
	Brothers and sisters . . . . .	12	
	Uncles and aunts, but unknown whether paternal or maternal . . . . .	5	
Alcoholic :	Paternal . . . . .	3	} 8
	Maternal . . . . .	5	
Epileptic family history (included above)	. . . . .	7	
Shock . . . . .	. . . . .	7	
Fall on head . . . . .	. . . . .	1	
Infantile paralysis . . . . .	. . . . .	4	

Personal history of alcohol . . . . .	15
Mitral regurgitation . . . . .	8
Aortic „ . . . . .	1

showing hereditary nervous instability in one form or another in 33·7 *per cent.* It is hardly necessary to point out that this figure does not represent a true index—many persons are only able to speak about their parents, and know nothing whatever of uncles and aunts, and many are unwilling to admit hereditary defect of this nature. The after history of the 1,174 patients as far as this Institution is concerned is given in the following table :

	Epileptics.	Non-epileptics.
Recovered . . . . .	—	313 (30·6 <i>per cent.</i> )
Relieved and transferred . . . . .	30 (19·8 <i>per cent.</i> )	251 (24·5 „ )
Died . . . . .	60 (39·7 „ )	290 (28·3 „ )
Remaining December 31st, 1913 . . . . .	61 (40·5 „ )	169 (16·6 „ )

Epileptic insanity being practically hopeless, interest here attaches to the deaths, which, it will be noticed, are relatively considerably more amongst epileptics. In order to throw some light on this, I have made an analysis of 100 deaths amongst epileptics, taken *seriatim*, and correlate certain causes with a similar analysis of the 290 non-epileptic deaths, in the following table :

	Non-epileptic.	Epileptic.
Tuberculosis . . . . .	24·1	33
Epilepsy . . . . .	—	14
Nervous system . . . . .	15·8	12
Circulatory system . . . . .	16·9	17
Respiratory system . . . . .	10·3	13
Senile decay . . . . .	16·5	2

In this connection it is worthy of note how few cases of cancer one meets with amongst the insane here. Of the 100 epileptic deaths only two were due to cancer, and four amongst the 290 non-epileptic. It is very questionable whether one of those listed as senile under the epileptic heading should be incorporated, as her first fit occurred after seventy years of age, and it was probably apoplectiform, though it left no paralytic after-effects and was in the nature of epilepsy, as were succeeding seizures. It will be seen that the mortality from tuber-



culosis is nearly 10 *per cent.* greater among epileptics, and it occurs to one's mind that this tendency to tuberculosis might be universal in this affection, and not due to infection contracted here. To help in deciding this I have divided the deaths due to tuberculosis during the ten years under consideration into four periods of two and a half years each, and the following table shows the percentage of deaths amongst those admitted in each period to the total admissions in that period up to the present time :

	First period.	Second period.	Third period.	Fourth period.
Non-epileptics. . . . .	30'2	24'1	20'3	15'7
Epileptics . . . . .	28'5	25'0	13'2	36'3

It is apparent that there is a gradual increase in tuberculosis mortality, depending on duration of residence amongst the non-epileptics, which does not obtain with epileptics. Epileptics then may possibly be potent agents in raising the tuberculosis mortality of communities amongst whom they live, and the following statistics taken from the Commissioners' Report help to bear this out. Taking the dozen asylums with the highest and lowest epileptic averages, we find that the first-mentioned group has an average epileptic percentage of 18'2 and a corresponding tuberculosis mortality of 17'8, while the dozen having the lowest epileptic percentages show an average epileptic rate of 7'9 and a correspondingly low mortality from tuberculosis, *viz.*, 13'7.

Conversely, taking the dozen asylums showing the highest tuberculosis death-rate, we find this averages at 22'9 and the corresponding epileptic average is 14; again, those with the lowest tuberculosis mortality show an average of 10'1, and the corresponding epileptic ratio is 10'9.

When it is recollected that, as already stated, the epileptic average in asylums for England and Wales is 12'5 and the tuberculosis mortality 16'6, the significance of the above figures will be apparent. Appended are the groups from which the above averages have been taken :

#### GROUP I.

	Highest epileptic percentages.	Tuberculosis death-rates.
London Co. . . . .	18'3	13'2
Wandsworth (Middlesex) . . . . .	15'2	16'2
Stafford . . . . .	19'9	25'2

				Highest epileptic percentages.		Tuberculosis death-rates.
Burntwood	.	.	.	20·8	.	19·1
Cheddleton	.	.	.	16·9	.	22·0
Wakefield	.	.	.	16·6	.	21·0
Wadsley	.	.	.	21·8	.	14·6
Newport	.	.	.	16·7	.	14·6
Plymouth	.	.	.	16·1	.	13·6
West Ham	.	.	.	16·6	.	13·4
Rubery Hill	.	.	.	20·2	.	25·0
Leicester	.	.	.	20·0	.	16·0
Averages	.	.	.	18·2	.	17·8

## GROUP II.

				Lowest epileptic Percentages.		Tuberculosis death-rates.
Isle of Wight	.	.	.	5·8	.	11·4
Wells	.	.	.	6·2	.	12·7
Carmarthen	.	.	.	7·8	.	23·2
Bucks.	.	.	.	8·2	.	13·2
Dorset	.	.	.	8·4	.	11·8
Brookwood	.	.	.	8·6	.	11·6
Netherne	.	.	.	8·7	.	9·5
Sussex, W.	.	.	.	8·9	.	17·4
Menston	.	.	.	6·7	.	10·9
Canterbury	.	.	.	6·9	.	15·2
Brecon and Radnor	.	.	.	9·1	.	11·3
Cornwall	.	.	.	9·5	.	17·3
Averages	.	.	.	7·9	.	13·7

## GROUP III.

				Highest tuberculosis death-rates.		Corresponding epileptic percentages.
Stafford	.	.	.	25·2	.	19·3
Rubery Hill	.	.	.	25·0	.	20·2
Derby Co.	.	.	.	24·2	.	10·5
Carmarthen	.	.	.	23·2	.	10·8
Barming Heath	.	.	.	23·2	.	13·7
Chartham	.	.	.	23·0	.	12·9

	Highest tuberculosis death-rates.	Corresponding epileptic percentages.
Suffolk . . . . .	22·6	10·6
Cotford . . . . .	22·1	11·9
Cheddleton . . . . .	22·0	16·9
Sunderland . . . . .	21·9	14·8
Norfolk . . . . .	21·6	10·1
Wakefield . . . . .	21·0	16·6
Averages . . . . .	22·9	14·0

## GROUP IV.

	Lowest tuberculosis death-rates.	Epileptic percentages.
Kesteven . . . . .	8·2	12·5
Brighton . . . . .	8·6	10·5
Hull . . . . .	8·6	12·9
Derby (Borough) . . . . .	9·9	11·0
Essex . . . . .	9·9	12·0
Herts. . . . .	10·9	11·4
Menston . . . . .	10·9	14·6
Isle of Wight . . . . .	11·4	5·8
Brookwood . . . . .	11·6	8·6
Parkside . . . . .	11·1	14·6
Brecon and Radnor . . . . .	11·3	9·1
Netherne . . . . .	9·5	8·7
Averages . . . . .	10·1	10·9

It will be noticed that Lancashire is not included, for reasons already mentioned, nor is York Borough, as the Commissioners state, referring to the proportion of epileptics there (19·7): "We, however, learned to-day that this proportion is factitious and is due to the large number of epileptics among the cases that have been transferred here." In this connection it is also noteworthy that the Institution for the Feeble-minded at Darenth has an epileptic proportion of 18·7, and a death rate from phthisis of 24 *per cent*.

I have been in the habit for a considerable time of treating certain cases of tuberculosis here with tuberculin, and it occurred to me that it would help matters in this investigation

to give diagnostic injections to all the patients in the epileptic ward, and at the same time to correlate the results with physical signs of pulmonary tuberculosis and alteration in weights during the past three months. I had already a series of controls amongst non-epileptics for purposes of contrast. Seventy cases from the epileptic ward were in all examined, ten of whom were non-epileptics. T. 001 c.c. was the injection given, and as regards physical signs I relied principally on the alteration in the apical percussion note, and the variations in transmission of the tuning-fork note of definite intensity from the supra-spinous to the infra-clavicular regions, auscultation being for the most part very unreliable in these cases owing to shallow breathing, which is very constant in all forms of insanity.

The results are given in the following series of tables :

TABLE I.

Reaction.	Cases.	Percentage of total.
Negative . . . . .	3	5.0
Doubtful . . . . .	7	11.7
Positive . . . . .	50	83.3

A negative reaction I have considered as a rise of temperature of under  $.8^{\circ}$  F. ; doubtful,  $.8^{\circ}$  ; positive,  $1^{\circ}$ , and over.

Under the positive reactions are included two cases of initial fall of  $2^{\circ}$  and  $1.4^{\circ}$  respectively ; to the former I gave a course of tuberculin a year previously for definite pulmonary tuberculosis, at which time she reacted very strongly, and since when she has gained weight and is now in robust health, and employs herself very usefully ; the latter showed marked right apical dulness as well.

TABLE II.—*Positive Reactions arranged according to Degree of Reaction, excluding the Two Cases of Initial Fall.*

Positive reactions.	Cases.	Per cent. on total.
$1^{\circ}$ to $1.4^{\circ}$ . . . . .	27	45.0
$1.5^{\circ}$ to $1.8^{\circ}$ . . . . .	10	16.6
$2^{\circ}$ and over . . . . .	11	18.3



TABLE III.—*Reactions correlated with Physical Signs, including the Two Cases before mentioned.*

Reactions.	Physical signs.			Percentage of cases showing physical signs, on total cases.
	Present.	Doubtful.	Not present.	
Negative	—	—	3	—
Doubtful	1	1	5	1·6
Positive	37	6	7	61·6

TABLE IV.—*Positive Reactions correlated with Physical Signs.*

Reactions.	Physical signs.			Percentage on totals in each class with physical signs.
	Present.	Doubtful.	Not present.	
1° to 1·4°	19	3	5	70·3
1·5° to 1·8°	7	2	1	70·0
2° and over	9	1	1	81·8
Initial fall	2			

TABLE V.—*Reactions correlated with Alteration in Weight in past three months.*

				Cases which lost weight, per cent. of each class.
	Lost weight.	Gained.	No change.	
Negative	—	2	1	—
Doubtful	2	1	4	28·5
Positive	20	17	13	40·0
Totals	22	20	18	
Per cent.	36·06	33·3	30·0	

TABLE VI.—*Positive Reactions correlated with Alteration in Weight in past three months.*

				Cases which lost weight, per cent. of each class.
	Lost weight.	Gained.	No change.	
1° to 1·4°	11	11	5	40·7
1·5° to 1·8°	1	4	5	10·0
2° and over	7	2	2	63·6

TABLE VII.—*Reactions correlated with Change in Weight in Pounds.*

		Gain.	Loss.
Negative	. . . . .	9	—
Doubtful	. . . . .	2	4
Positive	$\left\{ \begin{array}{l} 1^{\circ} \text{ to } 1.4^{\circ} \\ 1.5^{\circ} \text{ to } 1.8^{\circ} \\ 2^{\circ} \text{ and over} \end{array} \right.$	$\left\{ \begin{array}{l} 32 \\ 14 \\ 4 \end{array} \right\} 50$	$\left\{ \begin{array}{l} 37 \\ 4 \\ 34 \end{array} \right\} 75$

A very noticeable peculiarity amongst epileptics is the marked depression of temperature after even a comparatively small initial rise, and the quick response to the tuberculin in the first place. In 7 cases the temperature dropped to  $96^{\circ}$  and below—1 reaching  $95.4^{\circ}$ ; in 4 cases to  $96.2^{\circ}$ , and in 6 to  $96.4^{\circ}$ ; in 15 cases it dropped to between  $96.8^{\circ}$  and  $97.2^{\circ}$ , so that in 31 cases, or over 50 *per cent.*, this sudden depression was marked. In all these cases the epileptic seizures were very severe and frequent, and in the 7 cases in which the temperature fell to  $96^{\circ}$ , and below, exceptionally so. The thought suggests itself that this peculiarity bears some relation to nervous instability. I have been very much struck by it in epileptics as compared with others.

The frequency of subnormal temperatures amongst epileptics is very marked. Out of the 60 cases under consideration this condition was present in 35, amongst whom physical signs were present in 22, doubtfully so in 6, apparently absent in 7 cases.

With reference to Table III. The number of cases in which the right apex showed decided signs of phthisis as compared with the left is remarkable—out of the total number showing signs of tubercular deposit, *viz.*, 38, in 33 the right apex was involved. This is a fact of very great interest when it is recollected that it is mainly on the right side that the tracheo-bronchial glands are implicated in children. Of these 38 cases showing physical signs, 17 lost weight.

Enumerated among the epileptics are 5 who developed epilepsy after admission here, and past middle age; 4 of these have undoubted signs of pulmonary tuberculosis, and the fifth had a reaction of over  $1.5^{\circ}$  and had suspicious signs at one apex.

Of the 10 non-epileptic patients resident in the epileptic ward the following table shows the results obtained:

Reactions.	Cases.	Pulmonary physical signs.		Alteration in weight.		
		Present.	Absent.	Gained.	Lost.	Unchanged.
Negative .	6	1	5	3	2	1
Positive :						
1°5°-1°8° .	2	2	—	—	2	—
2° and over .	2	1	1	1	1	—

It is necessary to mention that one case giving a negative reaction, *viz.*, 4° followed by a decided fall, had been treated here twelve months ago for active phthisis with hæmoptysis. She still has right apical dulness, and has lost 4 lb. in the past three months, but shows no signs of active disease. Also one case gave a positive reaction of over 2°. She is a recent admission, of middle age, with a markedly subnormal temperature, and is said to have suffered from epilepsy in early childhood, but has had no fits since. She has lost 1 lb. in the past three months, but showed no physical signs of pulmonary trouble. One case—an imbecile—gave a reaction of over 2°. She had marked right apical mischief, although she had gained 5 lb. in the past three months.

Leaving out the case showing a negative (?) reaction which had been treated for active phthisis previously, 50 *per cent.* of the non-epileptics show no indication of tuberculosis. Reviewing my previous diagnostic tuberculin work among non-epileptic patients here, I find that 33·3 *per cent.* showed similar positive results. Considering the results from the above investigation, also the facts ascertained from the Commissioners' Report, together with the high mortality of epileptics from tuberculosis, it will at once be evident that there is a close relationship between tuberculosis and epilepsy. It has up to the present time been considered that epilepsy, by lowering vitality, predisposes to tuberculosis. No doubt, in many instances, that is so, but I suggest that the great majority of cases of idiopathic epilepsy met with in asylums—in which, as will be readily understood, the epileptic condition is very severe in degree, and has begun at a very early age—are directly due to the toxæmia resulting from invasion of the child's system by the tubercle bacillus, and its effects on a developing and naturally unstable nervous organisation, or it may be to reflex

irritation from diseased bronchial glands. Tuberculosis rarely affects children similarly to adults; the lesion is mainly in the tracheo-bronchial glands. I have been from time to time struck at *post-mortem* examinations on epileptics by the size of these glands, especially those on the right side. Recently I made a *post-mortem* examination on an epileptic who had given a positive reaction to a diagnostic tuberculin injection, but who had had no physical signs pointing to pulmonary tuberculosis. She died later showing all the signs of rapid tuberculosis, and the necropsy disclosed suppurating and caseous bronchial glands, and invasion of adjacent bronchi, but the lung-tissue itself showed no tuberculous deposit. In Vienna it has been shown that 90 *per cent.* of the school-children under the age of ten or eleven have been infected with tubercle. "Hamburger, of Vienna, among eighty-six cases of localised tuberculosis, found the primary lesion in the bronchial glands in eighty-five," Still in 81 *per cent.*, and Carr in 80 *per cent.* (*Early Diagnosis of Tubercle*, Riviere.)

We know that in incipient tuberculosis muscular exercise will bring about an auto-inoculation reactive rise of temperature, due to the flushing of toxins from the tubercular focus into the blood, and that this fact is taken advantage of for treatment; bearing it in mind I have had the temperatures of a number of epileptics taken, and am now constantly having this done for diagnostic purposes, immediately after a fit, and two-hourly for ten or twelve hours. I find that the results roughly correspond, but to a lesser degree, to the effects of the diagnostic tuberculin injection; in a few cases a surprising rise of temperature has occurred, and in some a fall, to be explained probably by the degree of toxæmia present. Tuberculosis is undoubtedly very rife amongst children in the poorest parts of thickly populated areas, as compared with the rural districts, and it is apparent that the children in these industrial districts cannot get the same care and attention from mothers who have often occupations to attend to other than domestic. The percentage of occupied to unoccupied married women is, for urban districts—England and Wales—12·9, and for rural 6·2. Now when a child whose vitality is lowered through lack of care and proper nourishment, to say nothing of fresh air, and who may in addition suffer from unstable nervous heredity, contracts tuberculosis, it may be quite conceivable either that a reflex effect is



induced, or that the toxins thrown into its system from the tubercular focus have an action, centric or synaptic, on the child's partially developed and ill-regulated nervous organisation, resulting in disturbance of the normal balance, and—especially in cases predisposed thereto by inherited nervous instability—the immediate result is an epileptic seizure, which, by bringing about auto-inoculation, has the effect of rendering

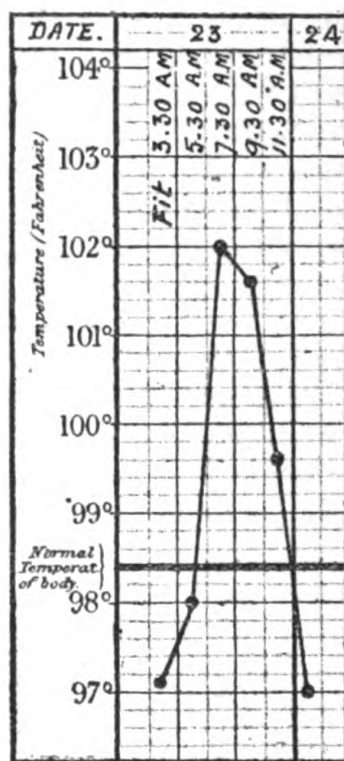


CHART 1.—Reaction after fit in case of epilepsy showing no signs or symptoms of pulmonary tuberculosis.

the toxic focus somewhat quiescent for a time. When the effects of this auto-tuberculinisation wears off the fit recurs, and after a time the sensitive neurones acquire a habit, or synaptic changes take place, from which recovery becomes unlikely. This constant auto-inoculation, after a longer or shorter time, either brings about cure of the tuberculous lesion, the danger of recurrence of the epileptic seizures being in direct ratio to the length of such period, or it keeps the toxin-producing focus in check, until debility from exhaustion of one kind or another deteriorates the defensive powers of the system, and rapid

tuberculosis results. It will be familiar to everyone having experience of epileptics what a low asthenic form the tuberculous process takes in them, and how advanced the lesions are *post-mortem*.

The percentage of epileptics in the urban and rural districts here under notice is respectively 24 and 13·5, and the Registrar-General's Report shows in urban districts a similar preponder-

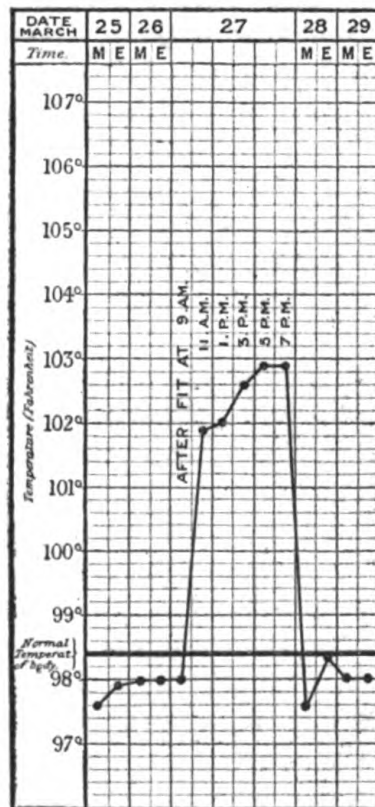


CHART 2.—Case of definite pulmonary tuberculosis in an epileptic showing marked reactive rise in temperature after a fit, previous to which and afterwards her temperature was subnormal.

ance of infantile mortality from tuberculosis, convulsions and atrophy, debility and marasmus.

	County boroughs.	Rural districts.
Tubercular meningitis . . . . .	1·28	·89
Abdominal tuberculosis . . . . .	1·79	1·14
Pulmonary tuberculosis . . . . .	·50	·24
Convulsions . . . . .	11·50	9·42
Atrophy, debility, and marasmus	17·41	14·84

Just as, at a very early age, the toxæmia resulting from

ricketts will cause convulsions, laryngismus stridulus, and carpopedal spasms, so, somewhat later, epilepsy may become established, as I have endeavoured to describe, by the toxæmia of tuberculosis. If this is the case, it is important that all cases of early epilepsy should be tested with tuberculin, and the state of their bronchial glands thoroughly investigated by means of the Röntgen rays. At that early age, if taken in time, a course of tuberculin treatment might cure the epilepsy. I have given such a course to one epileptic without apparently having any ameliorating effect on the seizures, but this result could scarcely be expected once the nervous system had firmly acquired the epileptic habit.

To recapitulate briefly, I have shown :

(1) That it is to the industrial districts we owe our high epileptic ratio in this Institution, and that urbanisation appears to principally affect the females in this direction in our neighbourhood.

(2) That the high death-rate amongst male children in Wolverhampton relatively to female is probably associated with the great excess of female epileptics there.

(3) That a high epileptic ratio is constantly associated with a high tuberculosis incidence, and *vice versa*.

(4) That the death-rate from tuberculosis amongst the non-epileptic is directly proportional to length of residence, which does not obtain amongst the epileptic.

(5) That the number of positive, and suspiciously positive, reactions to tuberculin amongst epileptics here is 95 *per cent*.

(6) That only 50 *per cent*. of non-epileptic patients associated intimately with the epileptics show a similar reaction.

(7) That, associated with a high ratio of epileptics in urban relatively to rural districts, is a similarly high infantile and early childhood mortality from tuberculosis, convulsions, and atrophy, debility and marasmus, and also a correspondingly high proportion of occupied married women, which it would be well for employers of female labour to bear in mind.

(8) That, except in terminal cases of active tuberculosis, loss of weight is not a valuable criterion of the presence of tuberculosis in epileptics.

(9) It is contended that epilepsy may be an evidence of tubercular infection in childhood, probably affecting the bronchial glands initially, and that the convulsions are due either to reflex

irritation so set up, or to the resulting toxæmia acting on an unstable nervous system, either inherited or acquired. Further, that the constantly recurring seizures not only establish a vicious habit as far as the nervous system is concerned, but also effect tuberculin auto-inoculation, thus tending to keep the tuberculous process in check, so that, instead of a fatal termination, epilepsy results.

(10) Consequently, the advisability of carefully searching for tubercular foci in children the moment epileptic fits develop, and also the immediate use of tuberculin in their treatment, should receive consideration.

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### Clinical Notes and Cases.

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*A Case of Hereditary Deaf-mutism with Pedigree.* By  
O. P. NAPIER PEARN, M.R.C.S.(Eng.), L.R.C.P.(Lond.),  
Assistant Medical Officer, Horton Asylum, Epsom.

INQUIRIES into the family histories of the pauper insane in large urban districts as a rule result in the acquisition of more disappointment than knowledge.

The patients are drawn from the flotsam and jetsam of a great city, in which residence at one address for a long period is the exception rather than the rule, and their relatives are often unable to give any information except as to their immediate collaterals and predecessors. Personal interviews with fathers and mothers frequently do little beyond establishing an element of immediate parental heredity in the patient's mental anomalies, and to ignorance is sometimes added a prejudiced reticence.

The pedigree of the case described below therefore acquires additional interest by virtue of its rarity. The patient in question is a moral imbecile whose personal history is as follows :

P. S—, first manifested overt mental abnormalities at the age of four, when he was subject to outbreaks of uncontrollable passion. He was sent to a special school where he developed a habit of petty pilfering, was careless of the calls of nature, indulged in masturbation, and exhibited himself rude in the girls' dormitory, being finally expelled at the aged of fifteen. He next spent some time with various relations, but was so intolerant of restraint that he was placed in a home for the deaf and





dumb where he remained some three years. The first reports from this institution were satisfactory but gradually his neuropathic mentality reasserted itself, he pawned his belongings, acquired bad companions, and became lax in his habits, being eventually again expelled.

Another trial at home resulted in violent attacks on his relatives, and once on a man who interfered when he was behaving improperly to a girl. Finally participation in a burglary led to his commitment to prison and subsequent certification. Throughout his career he is reported to have shown extraordinary vanity and conceit, with resentment of all control.

The patient was admitted to Horton Asylum in July, 1910, and is of good musculature, being 6 ft.  $\frac{3}{4}$  in. tall and well developed. His expression is dull and vacant, circumference of cranium 56.5 cm., palate high, but not very narrowed, ears small with adherent lobules, and helices thick and fleshy above but deficient below.

He is a deaf mute, but states that he can hear high musical sounds and is rather hyperalgesic.

His written communications display a puerility almost infantile. He is leading a useful institution life, but is subject to periods of restlessness necessitating change of occupation.

His pedigree is traceable on the maternal side to the beginning of the fifteenth century, but definite data can only be obtained as far back as 1729, though such isolated facts as "died of a decline" at the age of nine might be taken to indicate the possibility of tuberculosis making its appearance further back in the family history than the present record shows.

The first members exhibiting defects of speech and hearing are a great-grandfather and great-grandmother of the patient, and it is noticeable that while the descendants of this marriage show a tendency to deteriorate, those from a collateral branch (shown in the diagram by an arrow) include living members still prominently before the public eye for intellectual prowess.

It will be seen that the deaf-mutism has passed over the next generation only to reappear in varying degree in the succeeding two. Alcohol and tuberculosis figure with some prominence in the tree, but I can trace no case of epilepsy, and but few deaths in infancy. It is regrettable that the paternal ancestry is not so freely obtainable, but enough is known to show that alcoholism occurs here also.

Some seventy-three individuals are included in the accompanying diagram, of whom more than half exhibit sufficient deviation from the mental or physical normal to call for comment.

Those marked A are conspicuously alcoholic, and those marked 1 display definite evidence of the neuro-insane constitution although only one has been actually certified. T refers to tuberculosis in any of its forms, and D to any defect of hearing or articulation even if not amounting to deaf-mutism. Those of unusually good mental equipment are marked B. Further information is given in the following key, the numbers corresponding to those of the diagram.

#### KEY TO DIAGRAM.

1. A professional man with a well-known and distinguished career, but a distinct tendency to alcoholism.
2. Displayed mental attributes above the level of his social and professional contemporaries.

LX.

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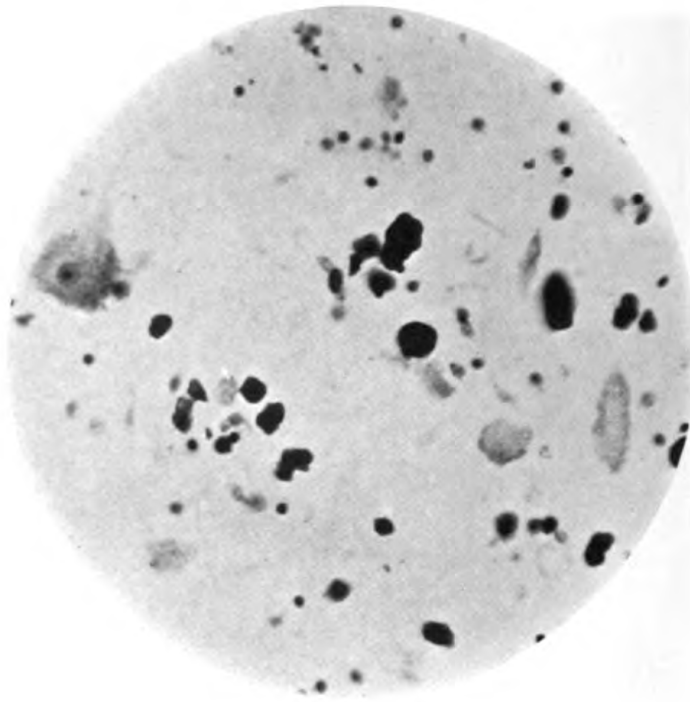
3. A congenital deaf-mute with a marked alcoholic leaning.
4. The subject of deaf-mutism acquired at an early age as a sequel to scarlet fever.
- 5 and 6. Both alcoholic.
7. Died of phthisis.
8. A man of unusual artistic abilities, but too unstable to undertake the business transactions of every-day life.
9. Possessed of some impairment of hearing, and was not of normal mental calibre.
10. A Royal Academy exhibitor, and a woman of exceptionally good all-round intellectuality.
11. The subject of pulmonary tuberculosis.
12. A congenital deaf-mute, his defect not being absolute, and his mentality good.
13. } Speech and hearing slightly defective.
14. }
15. Speech and hearing slightly defective. Is unstable, subject to violent rages and adopts a paranoid attitude towards life.
16. Has a very slight imperfection of speech.
17. Affected with tuberculosis of the knee-joint.
18. Two very passionate and unstable children.
19. Slight abnormality of speech and hearing.
20. Deaf-mute. Died of tuberculous meningitis.
21. Deaf-mute.
22. Deaf-mute. Imbecile. The patient referred to above.
23. }
24. } The subjects of tuberculous cervical adenitis.
25. }
26. } Alcoholic. The latter also tuberculous.
27. Became a nun, after being devoutly "low church."
28. Paralysed, "after a stroke."
- 29, 30, 31, 32. Died in infancy.

*Note by Dr. James Kerr Love, author of "Deaf-Mutism: a Clinical and Pathological Study," 1896.*

This family cannot be taken as a type of true hereditary deafness, unless the deafness be taken as an occasional expression of a more general nervous defect. The association of such defects is rather uncommon in true hereditary deafness. Again, I do not know of any type of deafness, which exhibits itself in one generation as slight deafness, or slight defect in articulation, and in another as congenital deafness. Congenital deafness, when hereditary, always has about the same amount of deafness, and that amount is very great. If this standard be adopted, only five cases of deaf-mutism occur in the whole tree. The family is very interesting, and much could be written about it. It is quite likely that the general defect is Mendelian in incidence, but so many factors are probably involved that one almost despairs of finding any typical ratios. I do not detect any evidence of syphilis in the tree, and although alcoholism may cause deaf-mutism, it should be looked on here rather as one of many effects.







To illustrate Dr. J. R. PERDRAU's paper.

*Adlard & Son, Impr.*

*Pigment occurring in the Dentate Nuclei of the Cerebellum in a Chronic Case of Graves' Disease associated with Scleroderma and Insanity.* By J. R. PERDRAU, M.B., B.S.(Lond.), Herrison, Dorchester.

F—, single, æt. 61, admitted in December, 1912, and died in April, 1913. History very defective. Mental symptoms had been present for some years. She was very thin and haggard, with marked exophthalmos. The hair was so scanty that she was nearly bald. A fairly large firm and elastic goitre present. One insane ear. Reflexes exaggerated generally, but equal. Muscular system normal. Complete absence of subcutaneous fat. The skin over the front of the abdomen and, to a less extent, that of the rest of the trunk and of the upper parts of all four limbs, was covered with raised, discrete, warty-looking masses. The skin could be picked up from the underlying tissues except in one place on the back of the left thigh, where the skin was atrophied, pigmented, shiny and adherent to the deep tissues, and had been subjected to a good deal of scratching. The skin of the face and hands was quite normal. She was very restless and difficult to examine. She suffered from chronic bronchitis, and had a mild tachycardia as well as a mitral systolic bruit. She suffered from very vivid hallucinations of sight and hearing, and was very excited in consequence at times. She became gradually thinner during her stay here, and passed into a marasmic condition in which she died.

At the *post-mortem* the thyroid was found to consist of a single lobe of the size and shape of a large pear occupying the right side of the trachea above and the middle line below. No traces of the left lobe were found. On cutting into it the centre was found to consist of great strands of fibrous tissue, and cavities of all sizes up to that of a chestnut and full of colloid, whilst the superficial parts looked normal.

In the central nervous system the pia was found to be thickened in places, especially over both hemispheres. The convolutions were atrophied, with slight excess of subarachnoid fluid; the vessels were somewhat atheromatous and a little congested. No naked eye lesions were found on cutting into the brain, except that the grey matter of both dentate nuclei of the cerebellum was found to be of a brownish colour totally different from that of the cortical grey matter.

Pituitary gland and adrenals looked normal. Chronic bronchitis and signs of an old pleurisy, as well as scarring of the left apex, were found in the lungs. The heart was small, but the left ventricle was slightly hypertrophied, and signs of early atheroma were present.

Nothing else of interest in the remaining organs.

*Microscopical Examination.*

*Dentate nuclei.*—The nerve cells are to a certain extent degenerated and atrophied, and are much diminished in number in places. Masses of a brownish pigment are scattered all over the grey matter of both nuclei, and do not appear to bear any special relation to the vessels or nerve

cells. No pigment was found in the cortical substance. The iron reaction was negative.

*Thyroid*: (1) Great strands of fibrous tissue especially in the centre of the gland. (2) Enormously dilated follicles full of colloid, also in the centre of the gland. (3) Hyperplasia with small follicles without colloid near the surface of the gland only. (4) Small hæmorrhages, recent and old.

*Pituitary*: Nothing of importance except that the alveoli of the pars intermedia were distended with colloid.

*Adrenals*: Hardly any traces of medulla are left. The cortex looks normal.

*Skin*: Two very prominent features were: (1) A huge increase of the squamous layer with a thinning down of the other layers of the epidermis; (2) the replacement of the underlying corium by a thick mass of coarse fibres in which no sweat glands were found. This condition of the corium spread beyond the limits of the superficial, raised patches. Unfortunately the examination of the central nervous system was not a complete one, but it was not at all clear at the *post-mortem*, that the microscope would reveal a cause for the rather dark colour of the dentate nuclei.

I am indebted to Dr. MacDonald for permission to publish the above case.

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*A Case of Loss of Memory.* By WM. LEGGETT, B.A.,  
M.D., Royal Asylum, Montrose.

THE patient, D. T. M—, male, æt. 51, married, with grown-up, healthy family, was admitted to Montrose Royal Asylum on July 29th, 1913, with history of having threatened violence to himself and to his wife, and of having lost his memory.

On admission he was very quiet and well-behaved, and had a comparatively intelligent facial expression, was cheerful, and appeared to show interest in what was happening around him. He tried to carry out any instructions given him. Habits were cleanly.

His general bodily condition was fairly good; the only abnormal conditions observed were high-tension pulse, external hæmorrhoids, and slight anæmia.

The type of case seemed to me to be somewhat different from the majority of those admitted to asylums, and, in order to obtain some information as to antecedent circumstances, I interviewed the patient's wife and the family doctor, who gave me the following history:

The patient, a joiner by trade, was accidentally injured in the parietal region of the head by a "batten," which had fallen a few feet before it struck him. Some idea of the force of the impact may be derived from the fact that there was not the slightest bruising or swelling of the scalp noticed.

The accident happened about 5 p.m. on Wednesday, June 11th of last year. He went home about half an hour after the accident, having

finished his work, and complained of severe pain in his head, but no other symptom. He went out for a walk later in the evening, as was his habit.

On the first morning after the accident, about 5.30, he vomited a few mouthfuls of greenish fluid, and this was repeated shortly afterwards. He continued to complain of pain in his head.

He went to work as usual for three days (the fourth day being Sunday), and on the Monday, *i.e.*, the fifth day, his memory was noticed to be affected, so he stopped work. He was continually wanting to go for long walks, and would not rest in bed.

During the night of the seventh day he had three convulsive seizures, and was unconscious for three days. He remained in a stuporous state for two weeks, being apparently very ill, and not expected by his wife to recover.

He had to be constantly watched, and nourishment was administered with great difficulty.

His health now improved somewhat, but he lay in bed with a dazed, vacant expression on his face. His breath was very offensive, bowels difficult to move, and the sight of food often made him vomit. There was now no headache, but he had a habit of passing his hand over his brow and picking his nose. He was irritable, obstinate, swearing without provocation, ill-natured, and threatened his wife. He answered questions, but his replies were not reliable. He generally knew his wife and one son, but no one else. His memory for everything else appeared to be quite gone. He did not complain, and always said he was fine.

Since admission here he has been quiet and well behaved, with alert expression, cheerful manner, and active in his movements. He is very polite, obedient, and willing to converse. Habits are cleanly, but he is quite unable to employ or occupy himself owing to lack of power of concentration. General health is moderately good. He remembers incidents that happened before the accident fairly well, but not accurately. In fact the only noticeable feature about him is absolute and complete loss of memory, except that he knows he has had an accident to his head, but cannot remember when or where it happened.

He has no idea of time, does not know the month, day of the week, or time of day. He does not know the name of a single person in the asylum, although he has been here nine months. He often, however, gives wrong names. His wife came to see him two days ago, but he has forgotten the fact, and says that his son came to see him yesterday, which was not the case. He suggests going to see people who have been dead for years. It is necessary to direct him to the particular bed he occupies at night.

He takes walking exercise, or sits about most of the day. He does not interfere with others, nor does he often speak unless spoken to. In fact the existing symptoms appear to consist solely of loss of memory.

There is no excitement, depression, or evidence of delusions or perversion present. He is said to have been an industrious worker formerly, and to have had an average memory. The gravity of the mental disturbance would seem to be out of proportion to the amount of violence sustained.



### Recent Medico-Legal Cases.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

#### NULLITY OF MARRIAGE ON ACCOUNT OF MENTAL DISEASE.

##### PARK v. PARK.

REPORTED BY SIR THOMAS CLOUSTON.

This case, which is without precedent in the Scottish Courts, was tried in the Court of Session, Edinburgh, before Lord Dewar without a jury on November 27th, 1913. The pursuer in the case, James F. Park, æt. 28, was a cabinet-maker in Wishaw who had known the defender, Esther Burnet, about the same age, intimately for nine years, and had been engaged to her for nine months before the marriage, which took place on January 3rd, 1911. The defender, Burnet, had shown no signs of mental disturbance except a slight amount of depression with a mild delusional condition which, however, was slight, until the night of the marriage. There was nothing in her behaviour that attracted attention during the marriage ceremony. She gradually became, from the time of the marriage, more depressed and more delusional, and had to be sent to Hartwood Mental Hospital within six months. She recovered within seventeen months and has remained mentally well since that time. James Park raised an action of "Declarator of Nullity of Marriage," on account of her insanity at the time.

The following report is extracted from the opinion of Lord Dewar, somewhat abridged.

"The summons concludes for Declarator that the marriage was *ab initio* null and void on one of two alternatives, namely, (1) that at the date of the marriage the defender was of unsound mind, and incapable of appreciating the nature and obligations of the contract of marriage, or (2) that her mental condition so affected her physically as to render her impotent and incapable of consummating the marriage. The pursuer did not ask for decree on the ground of impotency, and the only question I have to decide is whether he has proved his case on the first alternative ground above stated.

"So far as I am aware, there has been no contested case of this kind decided in the Scotch Courts, but it was not disputed, and I do not think it is open to controversy, that if at the date of the marriage the defender was of unsound mind, and incapable of appreciating the nature of the contract of marriage, and the duties and responsibilities which it creates, the pursuer is entitle to decree. The very essence of the contract of marriage is consent, and there can be no consent binding in law without soundness of mind. But of course the *onus* of proof—and it is a heavy onus—rests on the pursuer, because when a marriage has been regularly solemnised there is a strong presumption in its favour.

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that if she was in the same condition on the marriage day as she was when I saw her, she was not in a fit condition to give consent to the marriage. In my judgment she must have been in that condition on January 3rd and for some time before.' 'Suppose eleven days had elapsed between marriage and the time you saw her, is it not quite probable that she might be in the condition you saw her in, and yet have contracting capacity on her marriage day?' A. 'I do not think so. I think if you got a sudden change from a sound to an unsound condition through marriage, you would have had a case of acute mania. I do not think there was any sexual hyperæsthesia, I think it was a case of the gradual breaking down of the stability of the girl's brain over a course of time. I think she had been debating about the matter for weeks or months before she got married, and that the brain gradually got broken down and was broken down before marriage.'

"Dr. Grainger and Dr. Carswell, who saw her on January 21st and 26th, both agree. Sir Thomas Clouston did not see the patient, but he states that assuming she was in the condition in which the medical men found her, and that Park's evidence as to the slight depressions and delusions before the marriage and as to her conduct on the night is true, in his opinion she was deranged on January 3rd. This is, of course, only opinion, and by no means settles the question. I must form my judgment not on expert opinion alone, but on the whole facts proved in evidence. But the medical opinion, based on a careful examination of the patient soon after marriage, at least shows that there is some reason to suppose she was not of sound mind at the time of the marriage. And I do not think that Dr. Robertson, who was examined on behalf of the defender, opposed this view. His opinion is that, even assuming she was in the condition described on the 14th, it does not follow that she was insane on the 3rd, because melancholia may develop suddenly. That may be so in exceptional cases, but it usually takes a considerable time, and the evidence shows that it was not suddenly developed in this instance. (Sir Thomas Clouston had accentuated this point in his evidence.) The defender manifested symptoms of melancholia some weeks previous to the marriage. They were not recognised as such by her friends and relations at the time, but, looking backwards in the fuller light which we now have, I think it is pretty clear that the peculiarities in her conduct which were not considered of great importance were really manifestations of the disease from which she was suffering. They began in a small way and were scarcely noticeable at first. She had been devoted to the pursuer, and was very pleased and proud to marry him, but some weeks before the marriage she ceased to show affection for him, found fault with him on trifling matters, complained of things being dirty, the house, the pursuer's linen, or his boots, when all were scrupulously clean. She did not care to speak about the marriage, and would take no interest in it or in the preparation of the house, and purchasing of the furniture. As time went on she became restless and depressed. She did not sleep well, and would sit up in bed at night and say that she was making a mistake in being married. Her behaviour appears to have caused her relations considerable anxiety. Her stepmother, Mrs. Burnet, complained to Mrs. Glover and Mrs. Riddell that she could

not get sleep some weeks before the wedding, because she had to sit up with the defender. She also told John Park, junr., on the wedding morning that she thought of sending a wire to the pursuer not to come because she was so excited, and she told both Dr. Laird and Dr. Grainger after the wedding that the defender had taken some antipathy to the pursuer. Mrs. Burnet now denies that she said any of these things, but I regret that I cannot accept her denial. I think she did say them, and they were true. I am of opinion that it is proved that for some weeks before the wedding defender was depressed and sleepless, that she showed aversion to the pursuer without any cause, and that she dreaded the approaching marriage. I do not think, looking to the nature of the disease from which I believe she was then suffering, that this is inconsistent with the fact that she was able to express herself intelligibly in company, perform housework efficiently, and go through the marriage ceremony and subsequent festivities without rousing notice. It was when she was alone and brooded over the marriage that she became restless and depressed, and feared its approach, and showed aversion to the pursuer. When she had work to do, or company to entertain, her mind was at rest and she appeared to be normal. This was why she appeared to be able to take part in the music and dancing in her father's house after the wedding, and appeared to enjoy it with the others, but she did not wish to be alone with her husband. She waited till all the guests were gone, and then she began to weep. Whenever they were alone she informed him that she did not love him, and her marriage had been a mistake. She complained that she had not been sleeping well, and that her head was 'all jumbled up.' When in the cab she asked where the pursuer was taking her to. He said he was taking her to her home. Then she asked whether he was quite sure. When they came to the house some neighbour pulled up a blind, and she said, 'There you are; there are the people looking at me already.' When she entered the house she wept, and again said that she did not love him, and that her marriage had been a mistake, and that she wished she had brought her sister with her. For a long time she refused to go to bed. Finally, at 1.30, she consented, but she would not permit the pursuer to touch her or embrace her, or consummate marriage. The pursuer was quite unable to account for her strange behaviour, and was naturally much distressed. His brother John says: 'The second morning after the marriage my brother came over to the house about half-past eight and said, "For heaven's sake come away over and see Esther; I think she is going mad."'

"Another nine days passed, and, as there was no improvement, Dr. Laird was consulted. He found that she was of unsound mind—suffering from melancholia. He examined her for about three quarters of an hour in the presence of her stepmother. When Dr. Carswell saw her on the 26th she turned her back in bed, and definitely refused to respond either physically or mentally. She spoke a few words, but one had to piece them together." She was carefully nursed at home by a mental nurse, but did not make any improvement. "She was subject to painful delusions. She thought at times she was a dog, and that she had killed the King, and her husband, and all in the country, and was being punished for her sins. She was taken to Heartwood Asylum on



June 24th, 1911. There she gradually improved, and by March 20th, 1912, she was so much better that the pursuer took her out, because he thought the change would complete her recovery. This unfortunately did not happen. She became worse, and on August 28th was readmitted to the asylum. She again improved, and by the middle of September her delusions and hopelessness passed away, and on November 20th, 1912, she was discharged recovered. She has been quite well ever since, and the medical evidence is to the effect that, although such melancholia as she suffered from is apt to recur, in many cases it never does recur." "I have accepted the pursuer's evidence in preference to that given by the defender. He was, I think, an accurate and reliable witness, and anxious to avoid saying anything that might cause pain to the defender; and in every instance his account of what passed when others were present is fully corroborated. The defender, on the other hand, while she gave her evidence intelligently and with every appearance of candour, appears to have no recollection of anything immediately connected with her illness, and that I understand is not uncommon in mental cases. She says she was never ill at all, and should not have been taken to the asylum. She received no benefit from the treatment there. She was never depressed or dull, never had any antipathy to the pursuer, has been devoted to him all along, and never at any time showed any aversion to him. She never told the doctors or anyone else she had. It is a pure delusion on their part to say so. She never required a doctor at all, because she was never ill. Her so-called delusions were just dreams caused by too much reading. She appears to have no recollection of what passed on the marriage night. She says that she loved the pursuer then as she has always loved him, that it is not true to say that she told him that her marriage was a mistake, or anything of that nature. I think the explanation probably is, that although she can remember some things quite well, yet, owing to the nature of her illness, she has completely forgotten the things she said and did when subject to delusions. She is now quite well and attached to the pursuer."

The only other point that was important in the case, although not essential, was the question whether the marriage was consummated or not. On this point our profession did not come out so well as in the mental part of the case. Two medical men—Drs. Paterson and Davidson—gave evidence that the physical conditions they found were inconsistent with the marriage having been consummated, and that in their opinion the defender was a *virgo intacta*. Drs. Forsyth and Carmichael differed from this view, and thought that the conditions were consistent with consummation.

Lord Dewar goes on to say that—"There is, I think, sufficient to show that the defender became deranged some weeks before January 3rd, 1910. The predominating cause appears to have been excitement on account of the approaching marriage. If she had remained in good health one would have expected her to anticipate the marriage with pleasure. On the contrary, the idea of marriage was distasteful to her, and the nearer its approach the more distasteful it became. The pursuer, she said, was always good to her, yet she showed distinct aversion to him. I think this sprang from a delusion, and it was, in my opinion, a delusion which rendered her incapable of appreciating

# PAGE NOT AVAILABLE

right of appeal it could only be that conferred by the Criminal Appeal Act, 1907. That Act was passed to establish a Court of Criminal Appeal and to amend the law relating to appeals in criminal cases, and there was no right of appeal to the Court of Criminal Appeal, and no jurisdiction in that Court to hear an appeal unless the appellant could bring himself within that statute. By section 3 of the Criminal Appeal Act, 1907, "A person convicted on indictment may appeal under this Act to the Court of Criminal Appeal," and unless a person was "a person convicted on indictment" there was no right of appeal against the verdict or any part of it; therefore, the question was whether by reason of the special verdict under the Trial of Lunatics Act, 1883, or any part of such verdict, the accused was "a person convicted on indictment."

### *The History of the Law.*

In order fully to understand the effect of such a special verdict, it was well to examine the history of the law before the passing of the Trial of Lunatics Act, 1883. In the earliest times proof of insanity when he committed the act charged did not entitle the accused to an acquittal, but to a special verdict carrying with it a right to a pardon. The same course was taken when the accused had killed a man by misadventure or in self-defence (see 1 Rot. Parl. 444, 3 Edw. 2 [1310], and FitzHerbert's *Grand Abridgement*, Sub. Tit. "Corone," s. 351). At a later period the jury in cases of insanity could either find a general verdict of not guilty, or a special verdict that the accused committed the act but that at the time he was *non compos mentis*, and thereupon the Court gave judgment of acquittal (see Hale's *Pleas of the Crown*, ed. of 1800, vol. i, s. 28, and Sir Michael Foster's *Crown Law*, 3rd ed., s. 1 p. 279). It was to be observed that in such cases the result of either a general or a special verdict was the acquittal of the accused, and in the words of the preamble of the subsequent statute of 1800 it might be "dangerous to permit persons so acquitted to go at large." In the public interest it became necessary to provide for the safe custody of the insane person notwithstanding the verdict of acquittal. Consequently the statute of 1800, 39 and 40 Geo. 3, c. 94, entitled "An Act for the safe custody of Insane Persons charged with Offences" was passed.

The intention of the Legislature as manifested by that statute was to provide for the safe custody of persons who were found by the jury to be insane—(a) at the time of committing the offence, or (b) upon arraignment, or (c) upon trial, or (d) upon being brought before any Court to be discharged for want of prosecution. In the last-mentioned case it would be observed upon examination of section 2 that if even a person brought before the Court to be discharged for want of prosecution should appear to be insane, the Court was empowered to empanel a jury to try his sanity, and if the jury found him insane the Court could order his detention for safe custody during his Majesty's pleasure. Under the statute the finding of the jury that the accused was insane at the time of committing the offence was not a conviction of any offence, but was an acquittal on account of insanity empowering the court to order the safe

custody of the accused during his Majesty's pleasure. The alteration in the law made with reference to a person insane at the time of committing the offence charged against him was that although he was acquitted of the crime he was detained as a lunatic. As Lord Chief Justice Denman said in *Rex v. Oxford*, 9 C. and P. 550, "the statute must mean that the jury are to find that that act has been done by the prisoner which fixes him as a criminal unless he is a lunatic," implying that if he was a lunatic he was not a criminal, and was not convicted of any offence.

### *The Special Verdict.*

The last stage was the Trial of Lunatics Act, 1883, 46 and 47 Vict., c. 38, which was the statute now applicable. It made no substantial difference in the administration of the law except that it enacted that where, upon evidence, the jury were satisfied that the accused did the act charged, but was insane so as not to be responsible according to law for his actions at the time he did the act, they must return a special verdict to that effect. That was not a verdict that the accused was guilty of the offence charged, but that he was guilty of the act charged as an offence. In other words, this verdict meant that upon the facts proved the jury would have found him guilty of the offence had it not been established to their satisfaction that he was at the time not responsible for his actions, and therefore could not have acted with a "felonious" or "malicious" mind, which was an essential element of the crime charged against him.

The indictment of the appellant was for "feloniously" and "maliciously" wounding Lilian Ann Felstead, with intent to do some grievous bodily harm. It was obvious that if he was insane at the time of committing the act he could not have had a *mens rea*, and his state of mind could not then have been that which was involved in the use of the term "feloniously" or "maliciously," for *crimen non contrahitur, nisi voluntas nocendi intercedat*. It was further argued that, as the Trial of Lunatics Act, 1883, provided under section 2 that where such a special verdict was found the accused should be kept in custody as a criminal lunatic, the Legislature must have intended the special verdict to operate as a conviction of a crime. In his judgment that contention was not well-founded. By the use of the term "criminal lunatic" the Legislature meant by a compendious reference to bring into operation the powers given under the statute of 1860 (23 and 24 Vict., c. 75), which provided for detention in certain asylums, and under certain conditions, both of persons found insane and acquitted under the afore-mentioned Act of 1800 and of convicted persons who became insane during confinement in prison.

It was also contended that, as by section 20 of the Criminal Appeal Act, 1907, writs of error and other modes of bringing a verdict and judgment under review had been abolished, the Legislature must have intended to give a right of appeal to the Court of Criminal Appeal whenever such a special verdict was found. It must, however, be borne in mind that their Lordships were deciding the proper interpretation to be placed upon the words of the statute, and could not extend the right of appeal to those who, in their Lordships' opinion, were not persons



"convicted on indictment." For these reasons he came to the conclusion that the appellant was not a "person convicted on indictment." By the verdict of the jury he had been acquitted of the crime, and the order for his detention for safe custody was consequent upon the finding of insanity, and was not for a fixed period but during his Majesty's pleasure. The effect of this conclusion was to affirm the decision of the Court of Criminal Appeal that they had no jurisdiction to hear and determine the appeal of the appellant.

After referring to *Rex v. Machardy* ([1911] 2 K.B., 1,144; 28 *The Times Law Reports*, 2), and *Rex v. Ireland* ([1910] 1 K.B., 655; 26 *The Times Law Reports*, 267), his Lordship said that the special verdict under the Act of 1883 was, in his opinion, one and indivisible by reason of the statutory provision and took the place of the general verdict of "Not Guilty," and was a verdict of acquittal of the accused.

It was worthy of observation that if the appellant succeeded in his present contention, and established on the hearing of the appeal that the verdict as to insanity should be set aside, he would be entitled forthwith to be set at liberty, for the remaining part of the verdict could not justify the passing of any sentence upon him, as it did not find him guilty of having committed an offence, but only of having done the act charged. He was of opinion, for the reasons given, that the appeal should be dismissed.

The other noble and learned Lords concurred.

Solicitors.—Mr. P. Wellington Taylor; the Director of Public Prosecutions.—*The Times*, April 8th, 1914.

It will surprise most of those who read the learned judgment of the Lord Chief Justice to find that from a time before, probably long before, that of Sir Matthew Hale, who died in 1677, down to the year 1800, a lunatic who had committed a homicide, and was acquitted on the ground that he was *non compos mentis*, was allowed to leave the Court a free man. No doubt such cases were few, for the establishment of the plea of insanity to the satisfaction of the Court must have been very difficult at a time when it was not known that insanity is compatible with average and even high intelligence, and when the duration of an ordinary trial for felony often lasted less than half an hour; but either several such cases must have occurred about the same time, or some notorious case attracted attention, for the statute of 1800 to be passed. This Act did not alter the law in respect of the necessity of acquitting a prisoner who was proved to have committed a criminal act but to have been insane at the time; it merely gave the Court power to order his detention in spite of his acquittal.

Then came the Act of 1883, passed largely at the instance of Dr. Orange, at that time Superintendent of the misnamed

Criminal Lunatic Asylum at Broadmoor. I call it a misnamed institution because it appears from the judgment of the House of Lords that although by that Act lunatics who have committed criminal acts may be found guilty, they cannot be found guilty of crime. They are found guilty of doing the act with which they are charged, but this act is not in them criminal. It would be a crime for a sane person to commit such an act, but in the lunatic its criminal quality is removed by his lunacy. We see here the distinction made clear which is often so puzzling to those who read the answers of the judges to the House of Lords in 1843. In those answers it is stated that the lunatic is responsible "unless it is clearly proved that at the time of committing the act the accused was labouring under such a defect of reason . . . as not to know the nature and quality of the act he was doing." What is the nature, and what is the quality of the act, and what is the difference between them? The difference is the difference between the "act charged" and the crime. A is charged with the murder of B, or with wounding B with intent to murder. In the first case, the act with which A is charged is the killing of B. Killing is the nature of the act. This killing may or may not amount to murder. Murder is the criminal quality of the act. The nature and the quality are separable. A may plead guilty to the nature of the act—killing—but may plead that the quality was not murder, but manslaughter, justifiable homicide, or accident. In the second case, A may admit the nature—wounding—of the act charged, but may deny the intent to murder which constitutes the quality of that particular crime.

The prisoner who is found "guilty but insane" is found guilty of the act charged, but the act by itself—in its nature—is not necessarily a crime. To constitute it a crime he must be found guilty of the quality of the act also, that is to say, of the criminal intention. The prisoner who is found "guilty but insane" is not found guilty of crime. The word "guilty" is in his case a misnomer. At the time the Act was passed in 1883, I criticised it adversely in the *Medical Times*, and at long length the judgment of the House of Lords has justified my criticism. The prisoner who is found "guilty but insane" is in reality found not guilty, as is clearly stated by the Lord Chief Justice. It is a verdict of acquittal, and as far as

concerns the "King's pleasure" prisoners, the asylum of Broadmoor is not a criminal lunatic asylum at all, for its inmates, though they have been in words found guilty, have not been convicted of crime, and therefore are not criminals.

The effect of the judgment of the House of Lords is that no appeal lies from the verdict of "guilty but insane," and it must be a matter of congratulation, no less to the judges of the Court of Criminal Appeal than to the medical profession, that this should be so.

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### COURT OF CRIMINAL APPEAL.

#### MURDER ON THE HIGH SEAS.

#### REX *v.* COELHO.

(Before the LORD JUSTICE OF ENGLAND, Mr. JUSTICE COLERIDGE  
and Mr. JUSTICE SANKEY.)

REPORTED BY DR. MERCIER.

In this case Alberto Oliveira Coelho appealed against a conviction at Liverpool Assizes, before Mr. Justice Bray, of the murder of his wife. The appellant was not present.

Mr. Rigby Swift, K.C., and Mr. J. E. Singleton appeared for the appellant; and Mr. A. H. Maxwell and Mr. R. E. Gething for the Crown.

Mr. Swift said that the appellant was convicted of the murder of his wife in the British ship, the "Deseado," on the high seas about 170 miles west of Madeira. The only defence raised was that he was insane at the time. He now contended that the unqualified verdict of "Guilty" could not be sustained, having regard to the evidence, and that there had been misdirection by the learned Judge. The appellant, who was *æt.* 32, was a Portuguese, who understood no English, and had never been in England. At the age of 10 he went to Rio de Janeiro, where he carried on a successful business as a confectioner. He lived there with the woman, who afterwards became his wife. She left him, and he followed her to Lisbon, but she went away with another man to Peru. Ultimately she returned to the appellant, but again, in October, 1913, she left for Portugal, and he again followed her. In January the appellant married this woman at Oporto from his brother's house, living there with her until February 5th, when they embarked in the "Deseado" for Brazil. Up to that time the evidence showed that the appellant was passionately fond of this woman, whom he had twice followed across the world, and was then taking back to his home. There was evidence that he had complained of "inconsiderate conduct" on her part after the marriage, but there was no complaint after they got

on board. On February 7th she was sitting in the social room of the "Deseado." Three bandsmen were also in the room. The appellant came in with one Gomez, and a perfectly quiet conversation, free from gesticulations, ensued between the three. The appellant and Gomez then walked out, returning almost immediately, and the former without a word drew a revolver and fired twice at his wife at a distance of one and a half yards. He then walked quietly out with Gomez, and was arrested. No motive or provocation was shown, and he must have known when committing the crime that there was no possibility of hiding it or escaping its consequences. He was put in irons under the charge of a Spanish doctor until Rio was reached on February 19th.

The defence did not hear of this doctor until the trial, so that his evidence was not available. The learned counsel then dealt with the medical evidence which, he contended, showed that the appellant, after the crime, was suffering from incipient general paralysis of the insane, that at twelve years of age he had been operated upon for an affection of the eyes, and at sixteen and again at twenty-four years of age had suffered from syphilis, and had been six months in hospital, but had never been entirely cured. When living with his brother-in-law, in January, the latter said that he was "half mad"; he was inattentive to his business, and spent his time walking about the streets. He had said since the crime that he thought he was being poisoned by his wife. He stated that he knew nothing of what had happened until he found himself in irons. The doctor called for the defence said that he thought the appellant did not fully appreciate the difference between right and wrong.

Mr. Justice Bray left it to the jury to say whether the appellant through disease of the mind was not conscious of the nature and quality of his act, or, if he was, whether he was conscious of the difference between right and wrong, but he did not explain this, as it was suggested in *Macnaughton's* case (10 Cl. and F., 200), that the Judge should explain it. The question ought to have been left whether he knew at that time that it was wrong to kill his wife (see *Reg. v. Davis*, 14 Cox C. C., 563).

Mr. Maxwell submitted that there was ample evidence to justify the verdict. He was stopped.

### *Judgment.*

The Lord Chief Justice, in giving judgment, said that the determination of the appeal must depend upon the view that they took of the evidence. They were by no means intending to lay down that that Court would not interfere with such a verdict as was found in this case and substitute for it a special verdict under the Trial of Lunatics Act, 1883, if they thought it right and just to do so. But upon an examination of the evidence they could not come to the conclusion, as a court of law, dealing with the verdict upon which they thought was a proper direction, that the verdict was wrong. In this case the only alternative to quashing the conviction of murder would be to substitute a special verdict, with the consequence that the appellant would be detained during his Majesty's pleasure.

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His Lordship stated the facts, and said that those facts were ample to prove that murder was committed. They were of opinion that the direction to the jury was correct, and was put in language which had long been laid down as correctly expressing the law. In substance the jury were told that a man must be presumed to be sane and possessed of sufficient reason to be conscious of his crime unless he established the contrary, and proved that he was suffering from such a disease of the mind as to be unconscious of the nature and quality of his act, or, if unconscious, not to be conscious of the difference between right and wrong. No fault could be found with that, and evidence was, in fact, admitted in the appellant's favour to which the prosecution could have objected as inadmissible. The effect of the evidence for the defence was that the appellant had suffered from syphilis, loss of memory, persistent insomnia, want of concentration, and it could be summed up by saying that he was suffering from syphilitic neurasthenia. A certificate of a doctor was in evidence to the effect that after the crime he was under the delusion that his wife had tried to poison him. Further evidence was given that he was not fully conscious of the difference between right and wrong, and had delusions which interfered with his mental activity.

It was for the defence to establish facts upon which the special verdict could be found, and all this evidence was before the jury. The jury took another view. The certificate produced before this Court, but not before the jury, bore no date, and must have been sent to this country on instructions emanating from the appellant or his friends. It was meagre in its statements, and they did not think that they would be justified in acting upon it to vary the verdict of the jury. They had come to the conclusion that the appeal could not succeed, but only with hesitation, as it was a difficult case. It must be borne in mind that there were powers vested in the Home Secretary not available to the Court. They would not presume to intervene in any way with the advice which should be given to his Majesty, but they did think that this was one of those cases in which the powers vested in the Home Secretary might be usefully employed, if he thought fit, in making inquiries and examinations. The appeal must be dismissed.—*The Times*, May 12th.

This is one of the cases which raise the indignation of the medical commentator. It is a case in which a verdict of guilty of murder will be followed by the commutation of the sentence, and this will be regarded as a proof that the law, or the procedure under the law, is defective or faulty, inasmuch as a verdict of insanity was not found, and yet the extreme sentence of the law is remitted, and is remitted on account of the insanity of the convict. It is cases of this class that are made the text for homilies on the imperfection of the law, and for demands that medical assessors shall sit beside the judge to direct the jury in the way it should go. These clerics forget that the

assessor does not address the jury. He might influence the judge, but the judge is bound to expound to the jury the law as it is, not the law as the medical assessor desires it to be.

As I have pointed out in my book on 'Criminal Responsibility,' the cases in which a prisoner is convicted in spite of the plea of insanity, and is subsequently reprieved on the ground of insanity, are cases in which the evidence of insanity at the trial was not enough to satisfy the jury, and in which, after the trial, evidence comes to light which was not then available, or in which a doubt remains in the mind of the judge. The evidence of insanity produced at the trial of Coelho was weak. It certainly would not have satisfied me, and I cannot pretend to be sorry that it did not satisfy the jury. The murder was committed in cold blood; so are plenty of sane murders. No motive or provocation was shown, but it was shown the man was passionately fond of his wife, and that twice or three times she had run away from him. Sane murders from the motive of jealousy are not altogether unknown. Moreover, he said after the crime that he thought he was being poisoned by his wife, and this was brought forward as evidence of delusion; but it may not have been delusion. It may have been a well-founded belief: it may have been true. Or, if not true, there may have been some evidence to justify the man in entertaining it; it may, in short, have been a sane mistake. In any case, true or false, the belief was a motive. He said he knew nothing about the crime until he found himself in irons; this is one of the commonest subterfuges of arrested criminals, and should never be accepted without strong corroboration. It does not appear that in this case there was any corroboration. It was alleged in favour of insanity that there was no possibility of hiding the crime or escaping its consequences; but this was a *crime passionel*; the man was a Portuguese, and these are the characters of *crimes passionels* in Latin peoples. The doctor called for the defence said he thought the prisoner did not fully appreciate the difference between right and wrong, but on what evidence he founded this opinion does not appear in the report; moreover, the judgment of the Court of Appeal says there was evidence that he had delusions "which interfered with his mental activity." The phrase is a peculiar one. I have seen no report of the trial, and do not know what the nature is of the delusions referred to. Presumably they were not delusions

*ad hoc*—delusions with respect to his wife which might have influenced him to commit the murder; and presumably the evidence of these delusions was weak, or more would have been made of them. It must, I think, have been this evidence that influenced the Court to make the observation with which the judgment closes, for there is nothing else to make it hesitate and say that this was a difficult case. So much for the contention that the verdict was against the weight of the evidence; and as to the fairness of the trial, the Lord Chief Justice declared that evidence was admitted in favour of the prisoner to which the prosecution could have objected as inadmissible.

It was contended by Mr. Rigby Swift, K.C., for the appellant, that the judge had misdirected the jury by leaving it to them to say whether the appellant, through disease of the mind, was not conscious of the nature and quality of his act, or, if he was, whether he was conscious of the difference between right and wrong. The contention was that the jury ought to have been told to decide whether he knew at the time the difference between right and wrong, not generally and in the abstract, but specifically with respect to the act with which he was charged, of killing his wife. The contention is founded on the answer to the second and third questions of the House of Lords to the judges in 1843, which runs thus: "The mode of putting the latter part of the question to the jury, on these occasions, has generally been, whether the accused, at the time of the act, knew the difference between right and wrong; which mode, though rarely, if ever, leading to any mistake with the jury, is not, we conceive, so accurate when put generally and in the abstract, as when put with reference to the party's knowledge of right and wrong in respect to the very act with which he is charged. If the question were to be put as to the knowledge of the accused solely and exclusively with reference to the law of the land, it might tend to confound the jury by inducing them to believe that an actual knowledge of the law of the land was essential in order to lead to a conviction; whereas the law is administered on the principle that everyone must be taken conclusively to know it, without proof that he does know it. If the accused was conscious that the act was one that he ought not to do, and if that act was at the same time contrary to the law of the land, he is punishable"; etc.

The report of the appeal does not give Mr. Rigby Swift's

argument more fully than it is given above, and, therefore, I do not know what contentions he urged to the Court ; but it is evident that some nice and curious points arise in this case out of the answer of the judges. This answer lays down that the accused is punishable on two conditions, first, that he knew that the act was one that he ought not to do, and second, that that act was, whether he knew it or not, contrary to "the law of the land." In their answer to the first question, however, the judges omit the first condition, and say, "he is punishable, according to the nature of the crime committed, if he knew at the time of committing such crime that he was acting contrary to law, by which expression we understand your Lordships to mean the law of the land."

Now, it may be conceded that the accused man Coelho did know that the act of killing his wife was one that he ought not to do ; but it may well be argued that the conclusive presumption of law, that everyone must be presumed to know it, did not apply to him. The only reason that the knowledge of the accused with respect to the criminality of the act is immaterial to the issue, is that "everyone" is presumed to have this knowledge ; but does "everyone" in this case include every man, woman, and child on the face of the earth, or is the meaning of the term not restricted to those who have lived in that "land" of which this is the "law," or at least are, to their own knowledge, on English soil ? In this case the crime was committed on board an English ship, hundreds of miles from this country, a ship that was going neither to nor from an English port. The accused was a Portuguese, and so was his victim. English ships are notoriously largely manned by foreigners, among them a considerable proportion of Portuguese. Unless the accused had happened to notice the ensign, which is flown, not continuously, but on occasions only, that is to say, on entering and leaving port and on meeting another ship, unless he has happened to notice the ensign, and unless he also knew what it meant, of neither of which does there seem to have been any evidence, how can it be presumed that he knew "the law of the land ?" In such a case it may well be contended—I don't know whether it was contended—that the "conclusive presumption" of law did not apply. Supposing, as may well be the case, that such acts as the killing of a wife from motives of jealousy are, in Portugal as in France, either not murder in law, or are only



technically and by a fiction of law considered to be murder, it is clear that the accused killed his wife under a mistake as to the facts, as much as if a householder were to kill an innocent intruder under the mistake that he was a burglar. He was doing an act which, according to the code of the country in which he lived, and in which he thought he was, is an innocent and even a laudable act, and ought he to be punished on account of a mistake of fact which he may have had no means of correcting? Even supposing that he did know he was on an English ship, is it to be presumed that he therefore knew that he was on English soil and amenable to English law? The point is a purely legal one, and scarcely in place here, but it seemed worth making.

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## Part II.—Epitome.

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### Progress of Psychiatry during 1913.

#### AMERICA.

By Dr. WILLIAM McDONALD.

ON April 16th–18th, 1913, the Johns Hopkins Hospital, Baltimore, Maryland, opened the Henry Phipps Psychiatric Clinic. No event in the history of American psychiatry more justly deserved celebration, and none ever received more dignified and fitting observation. Scholars of world renown gathered from widely-separated parts to participate in the launching of the new enterprise. Practically the entire fifth number of vol. lxi of the *American Journal of Insanity* is devoted to the publication of the addresses delivered at the opening exercises, and every reader of the *Journal of Mental Science* would do well to review this remarkable collection of memoirs. There will be found a more complete and more authoritative *résumé* and retrospect of psychiatric progress than could possibly be conveyed in one or all of the annual letters of your correspondent.

Dr. Adolf Meyer, who has superintended the planning and erection of the institution from its very inception, has formally taken up his duties as Director. All who know of Dr. Meyer's devoted labours in his profession—and no one having the slightest acquaintance with the study of mental diseases is unfamiliar with his work—must feel that under his guidance the Clinic will accomplish its great purpose.

In his introduction to the above-mentioned collection of addresses published in the *American Journal of Insanity*, Dr. Meyer declares that: "For the first time in English-speaking countries a university and a large general hospital serving as a medical school received as a not merely affiliated, but as an intrinsic part of its facilities, a well-

equipped hospital to take care of patients with mental disorders. For the first time a university and a general hospital and its medical school were able to bring to fruition the dream of a great philanthropist and of many workers—a dream, to use the words of Mr. Phipps, that has had for its object the ameliorative treatment of the insane.”

Henry D. Harlan, President of the Board of Trustees of the Johns Hopkins Hospital, in his *word of appreciation*, whereby he officially accepted from Mr. Phipps the gift of the Clinic, said: “We have met to receive from its donor, to open and dedicate to the service of humanity a great building, designed by its gifted architect to translate into bricks and mortar, wood and stone, marble and steel, the most modern scientific theory of environment in which those afflicted with mental ills should receive care, planned with the most assiduous attention to detail, provided with every facility, every appliance, every device that human forethought and present knowledge can suggest, thoroughly furnished and completely equipped, and in which no reasonable expense has been spared to provide the means and the opportunity for the advanced study and treatment of mental disorders, and for the higher education and training of medical men, students and nurses, in this most important speciality.”

And Sir William Osler, on this same occasion, speaking of *specialism in the general hospital*, and referring to psychiatry, said: “A department of medicine, with the closest affiliation with the life of the community, has been segregated and stamped with a taboo of a peculiarly offensive character. Here it will take its place—a unit in the work of the medical school of a university.”

In these quotations, and running through all the scholarly addresses delivered at the opening of the Phipps Clinic, one may detect the *motif* dominating the grand work which we call “progress of psychiatry.” In and between the lines of each of these eloquent utterances is the common thought, variously expressed, that only in the degree that psychiatry establishes its position as a unit inseparable from and essential to medical science can it lay claim to advancement. The celebration of the opening of the Phipps Clinic is notable in so far as it indicates the coming of psychiatry into its own inheritance as one of the family of medical sciences. So long as the chief concern of physicians was the custodial care of the insane, so long did they deserve such criticisms as that of Dr. S. Weir Mitchell, who, in 1894, in an address delivered at the fiftieth anniversary celebration of the founding of the American Medico-Psychological Association, complained that psychiatrists had isolated themselves from the mass of the active profession; that, though the first of the specialists, they had never come back into line. He said:

“You soon began to live apart, and you still do so. Your hospitals are not our hospitals; your ways are not our ways. You live out of range of critical shot; you are not preceded and followed in your ward work by clever rivals, or watched by able residents fresh with the learning of the school. . . . There is hospital torpor, sclerosis of custom. . . . We have done with whip and chains and ill-usage, and having won this noble battle, have we not rested too easily content with having made the condition of the insane more comfortable? . . .

In the hospitals there is no effort to keep treatment or scientific product on the front line of medical advance. . . . To compare your annual output with the great German or English work were hardly a pleasant thing to do. . . . The case records are incomplete, scanty; there is no study of the secretions in the newer cases, of blood-count, temperature, reflexes, eye-ground, colour-fields."

Dr. Mitchell stated that in one hospital he could not get a stethoscope or an ophthalmoscope. The nurses he characterised as bad. "They are not taught. . . . They know nothing of packs, of drip-sheets, of Swedish movements and massage. . . . Hydrotherapeutics are not made use of. . . . The cloistral lives you lead give rise, we think, to certain mental peculiarities. . . . You hold to and teach certain opinions which we have long learned to lose. One is the superstition (almost, is it that?) to the effect that an asylum is in itself curative. . . . Upon my word, I think asylum life is deadly to the insane." He said that mechanical restraint, camisoles or straps, locked doors, barred windows, and overcrowded dormitories were still in use.

These are but fragments of Dr. Mitchell's criticisms, but they will show how, twenty years ago, we were weighed in the balance and found wanting.

Now, a curious thing has happened. We awake suddenly this year to find not only that psychiatrists *have come back into line*, but that they are deliberately accusing general practitioners of having fallen out of line. Psychiatrists are pointing out that mental disease is being treated in general hospitals with the same old crude, cruel, ignorant methods that have now been almost abolished in our present-day hospitals for the insane. We see gathered together the superintendents of general hospitals wondering among themselves how it can be that we accuse them of neglect and barbaric treatment towards certain of their patients. We hear them asking: "Can you expect us to correct these evils? Are they not irremovable? They have been with us always."

Such questions are answered for all time by the foundation of the Phipps Clinic.

*The intraspinal injection of salvarsanized blood serum*, as a possible palliative and curative method in the treatment of general paresis, tabes dorsalis, and cerebro-spinal syphilis, to-day monopolises the attention of all interested in the newest quests of psychiatry and neurology.

To Drs. Swift and Ellis<sup>(1)</sup> belongs the credit of devising a way of attacking the *Treponema pallidum* in its lodging place in the central nervous system, where shortly before in victims of general paresis it had been discovered by Drs. Moore and Noguchi.

The method first described by Swift and Ellis for the treatment of tabes was as follows: One hour after the intravenous injection of the ordinary dose of salvarsan about 40 c.c. of blood is withdrawn from a vein. When centrifuged, or allowed to stand for twenty-four hours in an ice chest, about 12 c.c. of serum separates, which is heated for half an hour at 56° C. and diluted to 30 c.c. with normal saline solution. This mixture is then injected by gravity into the spinal canal after the withdrawal of an equal amount of cerebro-spinal fluid. This round-about procedure was invented because it had been shown that

(<sup>1</sup>) Swift and Ellis, *New York Medical Journal*, July 13th, 1912.

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*the Pathological Anatomy of Certain Glands with Internal Secretion*), and of Dr. Todde (*Researches on the Function and Structure of the Sexual Glands in Man in Mental Diseases*). Dr. Todde has in truth worked industriously on the material which came under his observation, but he has not yet published his conclusions. Dr. Gorrieri, on his part, states that his conclusions have a merely relative value, owing to the fact that anatomical changes in glands are almost always the result of several different causes which act in the same direction. He believes, however, that he is justified in affirming that glands with internal secretion exhibit morbid changes much oftener in the insane than in the case of other patients, although these latter may have been exposed to the same toxic and infective agents. The same lesions, however, would never be characteristic, much less specific, for a given group of insane. The two works have been produced in the laboratories of the Psychiatric Institute of Reggio Emilia. From the same Institute come the researches of Carbone and Pighini on "The Chemical Constitution of the Brain in General Paralysis," and that of Pighini on "The Pathology of Epilepsy."

The authors have observed a considerable increase of cholesterin in all the brains of paralytics which were examined; so much so that one might speak of a true "cholesterin degeneration" of the brain, more or less marked according to the case. And the authors suggest a possible relation between this degeneration and the Wassermann reaction. In fact, the presence of abnormal quantities of cholesterin had already been recognised in the cerebro-spinal fluid and in the blood-serum of paralytics, and, in consequence of this, an anti-complementary influence had been attributed to this fluid in the Wassermann reaction.

As regards the pathogenesis of epilepsy, Pighini believes that, even if it is admitted that such exist, alterations in nucleinic interchanges have no pathogenic value whatever. He suggests, however, numerous analogies which exist between the phenomenology of organic interchanges during the epileptic crisis and the phenomenology which is observed in cases of hepatic insufficiency; and he asks if there is not room for conjecture as to whether there may be in epilepsy a critical disturbance of liver function.

An interesting contribution has been made by Dr. Riva, who, in the *Rivista Sper. di Freniatria*, published the case of "A Microcephalic Celebrity of the Asylum of Reggio Emilia." According to Riva, there exists a pure microcephaly of high degree, of which degeneration is the unique and necessary genetic cause. This degeneration consists of an arrest of development which has from the first affected the central nervous system, without determining any definite lesions or morbid modifications of structure, macroscopic or microscopic; the anomalies which are met with must then be regarded as atavistic reversions.

Sig. J. Consiglio, military surgeon, has just published in the *Rivista* a long series of observations on mental and nervous diseases in soldiers. He treats of cases of neurasthenia, epilepsy, hysteria, dementia præcox, alcoholism, chorea, simulation, psychic degeneration, etc.

The same author has surveyed with the greatest care the conduct of young criminals who have been incorporated into troops and sent to the war in Tripoli, with the object of offering them an opportunity of

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the symptomatological as well as from the pathogenetic point of view; according to Morselli it is the psychological standpoint which should serve as guide for a really rational nosological classification of traumatic neuroses.

Prof. Morselli also treats fully the practical questions relating to differential diagnosis and therapy; and the reading of his book is rendered attractive and easy even for a stranger by his facile exposition, at once lucid and animated. Particularly interesting are the pages devoted to the study of simulation. It is there quite easily demonstrated that the rich psychical symptomatology of traumatic cases does not elude the clinical researches which are competent to keep it under control.

It is worth while referring to the appearance of the new edition of the *Clinical Anatomy of the Nervous Centres* (Torino, S.T.E.N., p. 936) of Prof. Mingazzini, of Rome. The great value of this work is well known. The author, above all things, maintains his fidelity to a clinical basis for study, for anatomical description is constantly illustrated by numerous clinical examples chiefly taken from the works of the laboratory of the Roman savant and professor. It is superfluous to note that he always adheres to a strictly objective view, but this book gives us an accurate impression of the great work which, with method and patience, the author has done personally, or brought about its accomplishment, during a long series of years.

We must say just a few words respecting two other publications which are of psychiatric importance.

The first is a collection of works which the greater number of Italian alienists have published in honour of Leonardo Bianchi (Director of the Psychiatric Clinique in Naples), who celebrated this year his twenty-fifth anniversary as a clinical teacher. Some excellent memoirs have been contributed by several of his colleagues in honour of this genial and good man.

The second publication we owe to Profs. Tamburini and Ferrari, and it has as yet hardly made its appearance. It is concerned with the documentary history of the measures of relief provided for the various forms of mental alienation among different peoples and in every age.

We regret that we have not space at our disposal for a reference to what has been done for psychology in 1913. We will merely say that the young Italian Psychological Society has held its sittings at Rome in April and that the report of its proceedings will appear in the *Review of Psychology*.

It will hold a new congress this year in October at Naples, which will coincide with the congress which the Italian Phreniatric Society will hold at Palermo.

The subjects which will be treated in the wonderful capital of Sicily are:

- (1) Etiology and pathogenesis of the psychoses in relation to the physiopathology of the glands with internal secretion.
- (2) Psycho-analysis as a method of research and therapeutics.
- (3) Insanity and criminality in the army.
- (4) Pathological anatomy of phrenasthenics.
- (5) Nosography of manic-depressive insanity.

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really been carried out on the insane. But, on the whole, the benefit derived by psychiatry from all these data has been very small, and some of the most laborious researches merely revealed results already known to clinical experience, though it must be admitted, with Weygandt, that we need not reject the clinical thermometer on the ground that the existence of fever was known before its employment. As a matter of fact, although Kraepelin often refers to these normal data, he is usually content to rely on his own impressions as a sagacious observer. It is only a provisional resignation, and in investigating his patients Kraepelin follows, as far as possible, the scheme of the "psychic inventory." But the relation between psychology and psychiatry is clearly not analogous to that between physiology and general pathology. The physician is here only able to examine objectively the two ends of the chain—the pathogenic cause and the external manifestations of insanity. This simplification would not matter if the intermediary links were always identical—that is to say, if brains were all alike. But unfortunately that is far from being the case, and the chief lacuna in Kraepelin's psychiatry is precisely that indicated by the direction of his psychological investigations.

"In the evolution of psychic diseases the same causes necessarily produce the same effects." That is the axiom on which Kraepelin seeks to build up his psychiatric system. We ought, therefore, to be able to foresee the cerebral changes and the clinical picture if we know the pathogenic agent, and, inversely, if we know the former we ought to be able to deduce the latter. Such affirmations seem to conform to simple common-sense. In reality they raise inextricable difficulties. There are unknown associations of pathogenic causes, and even if the series of causes is established, we cannot be sure that each corresponds to a specific type of lesion. A whole category of lesions, of secondary nature, are found in all sorts of diseases, and all the types of cellular alteration yet known are incomparably less numerous than the pathogenic causes. Moreover, variations regarded as reactions against specific morbid agents are really only the cell's different ways of dying, or even successive stages of the same degeneration. If so, Kraepelin's leading principle is destroyed. If different morbid agents produce the same results there can be no classification based on ætiology, for mental troubles, being merely the manifestation of cellular lesions, might be identical in different disorders. Such an hypothesis conforms to modern neurological conceptions. Cortical syndromes with psychopathic manifestations may carry on the series of neuritic syndromes. That was the opinion of Wernicke. Two cases of psychosis, clinically identical, might thus be due to different causes, and the one be curable and the other not.

Such a conception is absolutely opposed to that of Kraepelin, for it renders a rational, that is to say, ætiological, classification impossible. Such a classification is certainly theoretically sound, and, since Wernicke, it has been found that many lesions corresponding to different morbid processes are not strictly identical, but Kraepelin himself admits that knowledge of the specific cellular changes in different diseases is still only rudimentary, and Nissl acknowledges that it is only at the outset that any elective fixation of the nervous elements can in favour-

able cases be observed. So that, anatomically, Kraepelin's postulate is not sanctioned by experience. Is it sanctioned clinically?

If ætiological differences are manifested by a different evolution of the results, it should be possible to group morbid cases according to their community of evolution, and Kraepelin regards the evolution and termination as extremely important. But a classification on this basis is not applicable in psychiatric practice. If we have to wait until the disease has terminated before we can group it, we must renounce both diagnosis and prognosis. Usually we must seek to form our large morbid groups by the help of ætiological notions, and our sub-groups by the help of clinical and anatomico-pathological notions. There are two great classes—exogenous and endogenous (or constitutional, the term preferred by Barat). Dementia præcox is placed in the first class because it resembles other disorders which certainly belong to that class; the essential endogenous disorders are manic-depressive insanity and paranoia. There is no *a priori* objection to this classification, and if we can grant to Kraepelin that the same causes necessarily produce the same effects, it would seem that all must be well. Unfortunately, clinical experience fails to confirm this postulate, and innumerable difficulties arise directly we begin to fit a particular case into its destined frame. It suffices to read the chapters which Kraepelin devotes to organic cerebral affections; the clinical descriptions of the psychic symptoms are almost identical in the most various disorders, and even mental troubles due to the same infectious cause are not necessarily identical in all cases. Kraepelin recognises it, and invokes some difference of action in the pathogenic agent. There is scarcely an indication of the great part played by psychopathic predisposition.

Where ætiological knowledge is lacking, the uncertainty is, of course, still greater. Thus in a classification on an ætiological basis, epilepsy and dementia præcox, of which the origin is unknown, are placed, provisionally at all events, in the exogenous group, though epilepsy, surely, might on some grounds be placed in the endogenous group. The difficulty is even greater as regards the forms of dementia præcox. At one time Kraepelin incriminated the sexual glands as their auto-toxic cause; now, having extended dementia præcox to childhood and to adult age, he is content to invoke vaguely some disorder of metabolism. It is surprising that an author who founds his classification on ætiology, should treat ætiology so capriciously. It is unnecessary to refer to the way in which the extension of dementia præcox has been carried so far that the classical meaning of dementia has been lost, and Kraepelin himself has led the necessary reaction.

These uncertainties are very instructive. They reveal a vice of method which is habitual. In the end the cases are only associated by community of evolution and termination: diagnosis follows prognosis. It is a formula which only possesses significance when there are initial symptoms which indicate the termination. Kraepelin makes great efforts to discover such symptoms, and his efforts have been very profitable to psychiatric science. But it can scarcely be said that the essential aim has been reached. Kraepelin's own statistics show an enormous proportion of errors of diagnosis (largely cases first supposed to be dementia præcox and afterwards found to be manic-depressive,

*i.e.*, recovered when seen some years later). In practice Kraepelin returns to simple symptomatic classification.

This result might more easily have been reached had not Kraepelin refused to accord importance to individual predisposition in the case of exogenous disorders, though it might be helpful even in dementia præcox. Not that Kraepelin ignores such predisposition; he even develops the idea, but clinically he makes no use of it. Few authors have so easily forgotten to put in practice their own wise precepts.

When, indeed, he turns to endogenous psychoses, the notion of the morbid soil takes on an almost too exclusive importance. Hardly hinted in the early editions of the *Psychiatrie*, mental degeneration has later assumed an ever greater extension, though there has been a certain embarrassment in utilising the new acquisition; it has not been admitted as a factor of a pathogenic combination, of which the other factor is constituted by external influences, such influences not being accepted in the case of conditions that are life-long. In manic-depressive insanity Kraepelin recognises external influences as simple occasional causes releasing the attack in predisposed subjects, but powerless to modify the evolution or the clinical manifestations. The collaboration of endogenous and exogenous influence is deliberately put aside. It is impossible to consider the miscellaneous cases brought together by Kraepelin under the heading of manic-depressive insanity as a single disease, and he himself seems to hesitate before the enormous extension of this nosological frame. We learn nothing by placing a case in a "natural classification" which has no existence, and can have no existence, in the sense understood by Kraepelin.

HAVELOCK ELLIS.

*Verbrechertypen* [*Criminal Types*]. (Heft 1, 1913.) Wetzel and Wilmanns.

The new series thus entitled (published by Springer, of Berlin) is edited by Drs. Gruhle and Wetzel, of Heidelberg, the first of whom lately published an elaborate study of youthful criminality, which has already been summarised in the Journal. *Verbrechertypen* is intended to be a medium for the publication of studies of various criminal types by the investigation of individual cases. The editors believe that what has hitherto been called "criminal psychology" has really had very little to do with psychology. It has been more concerned with statistics than with the criminal's personality or his psyche. The present collection is not to be devoted to the publication of essays, but to the scientific description of separate cases, variously grouped. Exceptional cases will not be specially sought; the chief object will be to present the average criminal as clearly and fully as possible, without forcing the case into any arbitrary or uniform scheme. *Verbrechertypen* is, in fact, intended to be "an archive of criminal personalities organised on a modern basis."

This first part ("Geliebtermörder") deals with men who have murdered their sweethearts from erotic motives. Two of the cases are presented by Dr. Wetzel, and the third by Dr. Wilmanns. While the murder was in each case determined by erotic motives, the personalities

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under ordinary conditions, it was scarcely above ; nor was attention highly developed. On the whole this examination revealed simply a normal subject. Her aptitude is of highly specialised nature, and to it Lahy devoted very careful study. This study confirms the opinion that the cause of Uranie's success is chiefly to be found in prolonged voluntary training, and that this has been inspired by her ardent faith in her own exceptional gifts, and she speaks of her methods in the tone of a religious adept.

Her technical methods have, however, been of great help to her, and they largely resemble her brother's. Visual images count for much with her. She has numeral schematic figures, "visual rhythms" by which figures are grouped into geometrical figures. Everything is done to break up the monotony of figures. She is also aided by coloured-vision ; every figure from 1 to 9 appears to her a different colour ; all the letters of the alphabet are also of different colour. In addition to visual memory, motor memory also plays some part ; in hearing figures she recites them in a low voice, and her lips are always in movement as she works, even though no sound is uttered.

HAVELOCK ELLIS.

## 2. Asylum Reports.

### *Lunacy in Egypt.*

We have just received the reports of the two asylums for the years 1911 and 1912. The delay in their production was due to the enormous amount of work connected with the administration of the overcrowded asylums and the starting of the second asylum at Khanka. Now that we have the reports, we are astonished at the marvellous care with which they are drawn up. The various tables contribute exact information, not only as to the medical, but also as to the social and economic sides.

The reports consist of two chief divisions, the one referring to the parent asylum at Abbassia, and the other to the new and auxiliary asylum at Khanka.

During the year 1912, 1331 patients were under care. A great increase of admissions has taken place, the greatest increase being of fellaheen suffering from pellagra. It reads strangely to us that of 416 cases discharged, 259 were still insane, but not being dangerous, were sent out to make room for more acute cases. The death-rate in 1911 was high, being 217, that is, 14 *per cent.* of those daily resident.

A considerable number of deranged patients are first received at various local general hospitals, and of these a large proportion are sent on to Abbassia, but many either recover in the hospital, or are found not insane when they arrive at Abbassia. There was an increase of 260 patients in the year. Formerly there was an old criminal lunatic institution at Tura. This has now been closed, and the patients have been sent to Abbassia, adding greatly to the danger and the responsibility of the officers, and also endangering the safety of the other patients. Most of them are in special blocks. At Abbassia gradual extensions are being made, and houses for officers and head nurses are being provided.

The male population greatly exceeds the female, and there is no overcrowding among the women.

The medical service at present consists of Dr. Warnock as head, Dr. Pearson as second and deputy. A third English doctor has just been appointed, and there is also a staff of six Egyptian doctors. At Khanka, at present, Dr. Dudgeon is the only English doctor, but it is intended that he should have a deputy as well as two Egyptian assistants. Practically it requires two years before an Englishman is sufficiently at home in Arabic to be of full service as Deputy Superintendent.

The Egyptian doctors are willing, but wanting in administrative capacity, and they do not retain their positions long, as the pay is not sufficient for them to maintain a family.

The overcrowding of patients is undeniable, and the overworking of the superintendent has been equally manifest. We cannot help thinking that much of the merely statistical and administrative work might fall on other shoulders.

There has been a slow development of the class of paying patients, and Dr. Warnock reports the admission of seventeen voluntary boarders.

The proposed Lunacy Law is under revision, and we should like to know on what lines it is to develop; we hope these will not be too nearly allied to the English ones.

Dr. Warnock gives as the chief features of the year the establishment of the first asylum at Khanka, and the doing away with the criminal asylum at Tura; the high admission- and death-rates and great increase of pellagrous insanity; better provision for patients, reduced amount of restraint and narcotics, and the extension of the buildings at Abbassia.

In an appendix to the report we have the statistical tables, from which we will take some figures.

In January, 1913, there were 934 male and 393 female patients, being an excess of 320 patients over the beds, 953 new cases were admitted, while 141 were discharged recovered or not insane; 206 died, and 248 were sent out uncured, 380 were transferred to the new asylum, leaving at the end of the year 1,305 in residence. Many of the 248 released uncured were really unfit for liberty, and some were readmitted after committing offences. This is a rather terrible admission, but the officers cannot be blamed as want of space was the cause.

Full tables as to the cost of buildings and equipments are given. The annual gross cost per patient was £25.553 m.; daily cost, 69 millimes—nearly eighteen pence. Of the admissions, 505 were certified as dangerous, and 193 as suicidal.

Ninety-one criminals were sent as insane to Abbassia, but only 75 proved to be insane. The plea of insanity appears to be a very common one in Egypt, and malingering is not unknown. Very full tables are added, which give the nature of the offences committed and the form of insanity from which the prisoner suffered.

Pellagrous insanity and that depending on hasheesh represent a very large number of these cases. Thus, of the 91 criminals 14 owed their insanity to pellagra and 6 to hasheesh. Chronic mania and dementia include thirteen, and simple mental weakness 16. Among the pellagrous patients were several guilty of murder or violent assaults. The usual asylum tables, showing rates of admission and discharge, and the times of the year of the receptions, all provide interesting reading.

In table V, giving the forms of insanity of patients admitted, number-  
LX.

ing 922, 98 are entered as due to hasheesh and 96 to pellagra. General paralysis supplied 30, and alcohol 40. Chronic mania and dementia comprise the largest number of patients, namely, 129.

The greatest proportion of the patients were Egyptian, but in all seventeen races are represented. Copts come next and then Greeks.

Of the sufferers from general paralysis, the town-dwelling Egyptians provide the great majority. The pellagrous patients come more from country districts, and Dr. Warnock reports the disease as being more prevalent than ever. He records the occurrence of the disease in asylum patients who have been under care for years, and have had no maize in their diet.

The hasheesh patients come chiefly from Cairo and Alexandria; there were 13·8 per cent. of hasheesh patients among the year's admissions.

In the table of causes of death, tuberculosis is very low, but dysentery and colitis were very common causes of death. Pellagra and general paralysis figure next in the proportion of causes of death. Bilharzia is only represented by one death. As pointed out already, the death-rate is very high, due chiefly to pellagra and dysentery. The causes of the dysentery are discussed but not definitely decided upon.

With pellagra there was often dysentery, and in ten of the cases bilharzia worms were found in the portal blood. These were also found in dysenteric cases, in cases of mania and acute delirious mania.

Of 100 cases of dysentery, 59 recovered and 41 died. The blood of 10 cases was examined, and all were found positive to the Shiga, Kruse, or Flexner bacillus. Forty-three cases were injected with anti-dysenteric serum; of these 22 recovered and 21 died. Seven were injected with Ruffer's polyvalent, and of these only 1 died. Emetine had no effect.

There were 8 cases of dysentery among the staff. These were injected with Lister Institute serum and all recovered. Narcotics were required more by the women than by the men, but on the whole their use was greatly reduced during the past year. Paraldehyde was the favourite drug; 312 patients were fed on 5024 occasions, and 1087 minor accidents occurred.

There was one attempted suicide, but no successful one. A very elaborate table is given showing the admissions monthly, deaths monthly, the variations of temperature, with records of seclusion and hypnotics. A separate report from the annual one is given by Dr. Dudgeon, and this gives fully the regular tables, and points to the work already begun, and the prospect of the development of this branch of the old asylum. It is placed in a very isolated position, but, provided water can be supplied, not only can the estate be worked at a profit, but it will also provide certain supplies to both asylums. The work is arduous but interesting, and Dr. Dudgeon has his heart in it.

As this is the first report, we think it hardly necessary to go into details beyond repeating that it is a relief to the parent asylum at Abbassia; it receives only quiet, male patients, most of whom are able to do some work in the farms, but few are of any use for any mechanical work.

G. H. SAVAGE.

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Present at the previous Council Meeting: The President, Dr. James Chambers, in the chair; Drs. T. Stewart Adair, H. T. S. Aveline, E. H. Beresford, Robt. B. Campbell, R. H. Cole, H. Hayes Newington, Richard R. Leeper, Douglas MacRae, J. Porter Phillips, R. G. Rows, J. Noel Sergeant, R. H. Steen, J. G. Soutar, D. G. Thomson, H. Wolseley-Lewis, and M. A. Collins (Hon. Sec.).

#### MINUTES.

The minutes of the last meeting, which had already been published in the Journal, were taken as read, and were approved and signed.

#### OBITUARY.

The PRESIDENT said that since the last meeting two members of the Association had passed away, leaving sad blanks in their respective circles. Dr. Mumby, the Medical Superintendent of Portsmouth Asylum, was an able physician, an exemplary citizen, and beloved by all who knew him. Notwithstanding grave bodily illness, he persisted, with remarkable fortitude, in performing his multitudinous and arduous duties, and he practically died in harness. The hand of death was laid on Dr. John O'Connor Donelan very early in his career. He was devoting himself, in no ordinary degree, to the welfare of his patients. By his decease they had been deprived of a truly sympathetic physician, and his colleagues mourned the loss of a delightful companion. He felt sure that the Association would wish to have an expression of sympathy conveyed to the relatives.

This was agreed to by members rising in their places.

#### MATTERS ARISING AT THE COUNCIL MEETING.

The PRESIDENT said that two matters which had been discussed at the meeting of Council just held would be brought before this General Meeting. He asked Dr. Wolseley-Lewis to move a resolution.

Dr. WOLSELEY-LEWIS said the resolution which had been entrusted to him to propose ran as follows:

"That inasmuch as Part 7 of the London County Council (General Powers) Bill deprives the Visiting Asylums Committee of its special duties and responsibilities as a Statutory Committee under the Lunacy Act, and is inconsistent with the principles previously adopted by the Medico-Psychological Association, it is resolved that representations in opposition to such proposals in the above-mentioned Bill be made to the Home Secretary."

He said it would be remembered that at the November meeting this question came up as a general question, and that a resolution was then carried by the Association, which was communicated to the Home Secretary. The present resolution was merely particularising the principles adopted by that resolution in connection with the General Powers Bill of the London County Council, which was at the moment before Parliament. With regard to the form the representations would take, they would be by means of a letter to the Home Secretary. The Parliamentary Committee, at its sitting that morning, were fortunate enough to have the presence of Dr. Hyslop, and he kindly offered to use his influence—which was very great in these matters—to do what he could to have this Bill opposed. He therefore moved the resolution.

Dr. MACDONALD seconded.

Carried unanimously.

#### ELECTION OF CANDIDATES AS ORDINARY MEMBERS.

The PRESIDENT nominated Dr. Adair and Dr. Mackenzie as Scrutineers for the ballot.

The following gentlemen were duly elected:

RODGER, MURDOCH MANN, M.D., Ch.B. (Univ. Glas.), Second Assistant Medical Officer, Cardiff Mental Hospital, Whitechurch, Glamorganshire.

*Proposed by* Drs. John R. Lord, Norcliffe Roberts, and M. A. Collins.

SHIELD, HUBERT, M.B., B.S. (Durham), Assistant Medical Officer, Gateshead Borough Asylum, Stamington, Newcastle-on-Tyne.

*Proposed by* Drs. J. B. Tighe, T. Stewart Adair, and Richard Kelly.

SLANEY, CHARLES NEWNHAM, M.R.C.S., L.R.C.P. (Lond.), Deputy Medical Officer, H.M. Prison Service, Avenue Lodge, Parkhurst, I.W.

*Proposed by* Drs. O. F. N. Treadwell, G. Clarke, and M. A. Collins.

#### THE LATE DR. HACK TUKE.

The HON. SECRETARY read a letter which he had received from Mrs. Sainsbury (daughter of the late Dr. Hack Tuke), offering a framed photograph of a group of the Association taken in 1881, at which time her father was President.

The PRESIDENT said that he had gratefully accepted this kind offer by Mrs. Sainsbury, as he felt sure it would be the wish of members that he should do so. The photograph had been placed in the Committee-room of the Association.

#### TREASURY GRANT FOR RESEARCH.

The SECRETARY read the following letter from the Board of Control:

"THE BOARD OF CONTROL,  
"66, VICTORIA STREET, S.W.:  
"25th March, 1914.

"SIR,—I have the honour to inform you that on the recommendation of the Board of Control, and the advice of the Home Secretary, the Lords Commissioners of His Majesty's Treasury have placed at the disposal of the Board a sum of money, not to exceed £1,500 in the financial year 1914-15, for the purpose of aiding and encouraging scientific research into the causes and treatment of mental diseases and mental defect.

"The Board has now under its consideration the question of the nature and amount of the grants which it would be expedient to make towards the cost of such researches, and of the objects towards which the investigations so aided might with most advantage be directed in the first instance.

"The Board would esteem it a favour if the Medico-Psychological Association would give the matter their early consideration and make any suggestions thereon which may occur to them.

"I have the honour to be, Sir,

"Your obedient servant,

"W. P. BYRNE.

"THE HONORARY SECRETARY,  
"MEDICO-PSYCHOLOGICAL ASSOCIATION."

The Secretary said that the letter was dated 25th of March, and he wrote to the Board of Control pointing out that the next Quarterly Meeting of the Association would be held on 19th of May. Their reply was that if it was dealt with at the present meeting it would be quite satisfactory.

The PRESIDENT called upon Dr. Soutar to speak on the subject.

Dr. SOUTAR said this matter first of all, came before the Status Committee, because the subject was one with which that Committee were, to some extent, dealing. From the Status Committee it passed to the Council, and from them it now passed to the general meeting for the approval or negating of the Council's recommendations. He could best indicate what had been done by reading three resolutions which it was proposed to submit to the present meeting, merely making any brief comments which seemed desirable. But he had really little to say. The first resolution ran:

"That the thanks of the Medico-Psychological Association be given to the Board of Control for their letter of March 25th, 1914, and for their courtesy in asking for suggestions from the Association as to the nature and amount of grants which it would be expedient to make towards the cost of scientific research into the causes and treatment of mental diseases and mental defect, and as to the objects towards which the investigations so aided might with advantage be directed."

He thought that the resolution would be generally accepted by the Association as a very suitable resolution of thanks to the Board of Control. The receipt of such a letter by the Association marked, in his opinion, a very important era in

psychiatry, inasmuch as recognition has now been officially given to research in this subject.

The second resolution was as follows :

"That the Medico-Psychological Association, recognising that in the detailed consideration of the most hopeful lines upon which to pursue investigations, and in the selection of investigators, many difficulties will arise, which cannot be solved at this stage"—obviously that was so until the matter had been carefully considered—"therefore feels it can best be of service to the Board of Control by offering to put at the service of the Board the knowledge and experience of our members either by nominating some representative members of our Association who will be available for consultation with the Board, or by offering the services of our Association in any other way which is most acceptable to the Board of Control."

If it be agreeable to the meeting that that should go forth to the Board of Control, and if the suggestion be accepted by the Board of Control, then the general feeling of the Association in regard to the line of research to be pursued would always, through their representatives, be before the body which had to allocate the monies. He thought that was as far as the Association could go at the present time, for it was a matter which would need a great deal of detailed consideration.

The third resolution which he had to submit was one of a general nature, namely :

"That, as a general principle, the allocation of the sum available should be (a) Grants in aid of researches proposed or undertaken by Universities and Public Authorities acting in association, or singly, and (b) grants to individual investigators."

It was felt that there would be certain forms of research, which could be best carried out in some established laboratories, or where men were working in co-operation; and a grant-in-aid of such work might be of the greatest service. The establishment and encouragement of these places might result in what members were looking forward to, and it was well to keep this before the minds of those interested in the matter, namely, the establishment of schools of psychiatry for teaching and research, or to be more logical, first research, then teaching, because the researcher having some story to tell, would be glad to tell it as a teacher. It was thought, too, that certain grants should be available for individual investigators, because in the history of science individual investigators, not connected with laboratories, had effected magnificent work in the interests of science, and it was probable that among the members of this speciality some investigators would arise who would be able to pursue their work if aid were afforded to them by grants of this nature. He had pleasure in submitting these resolutions to the meeting, and to propose that an answer on these lines be sent to the Board of Control.

Dr. Rows said he had pleasure in seconding the resolutions which had been proposed by Dr. Soutar. Everyone connected with psychiatry in this country must feel that research must be done before much progress could be made in regard to our knowledge of insanity or its treatment; and it was most gratifying to have reached a day when it was found that members of the Government and of the Board of Control were taking the matter seriously in hand, and offering a sum of money to support the initiation of research in our special branch. He felt certain that this action would act as a great stimulus, not only to the workers, but to all who had to do with, and had to provide for the management of asylums in which the insane were treated. He therefore hoped that everyone connected with this branch of the profession—those who provided the establishments, those who taught, and those who carried out the treatment of the insane—would be encouraged by this recognition of the speciality, which would assist in elevating it to the position it ought to occupy as an important branch of medicine.

Carried.

#### PAPER.

Dr. HELEN BOYLE then read a paper on "Some Observations on Early Nervous and Mental Cases, with Suggestions as to Possible Improvement in our Methods of dealing with them." (See page 381.)

It was discussed by the PRESIDENT, Sir GEORGE SAVAGE, Drs. PERCY SMITH, STEWART, BEDFORD PIERCE, SERGEANT, HYSLOP, CORNER, FOTHERGILL, STREET, WOLSELEY-LEWIS, CRAIG, HAYNES, and DAWSON, and Dr. HELEN BOYLE replied.

The members dined together afterwards at the Café Monico.

## SOUTH-WESTERN DIVISION.

A MEETING of this Division was held at the County Asylum, Powick, Worcester, on Friday, April 24th.

The following members were present: Drs. Aveline, Bullen, Braine-Hartnell, Rd. Eager, Fenton, Morrison, Nelis, and Walford, and one visitor, the Rev. Mr. Lane, Chaplain to the Asylum.

Dr. Soutar telegraphed his regret at not being able to attend, and the Hon. Div. Secretary was also unable to attend, but had arranged with Dr. Aveline to act for him.

Dr. Braine Hartnell was voted to the Chair.

The minutes of the last meeting were read and signed.

Dr. Blachford was re-elected Hon. Div. Secretary, and Drs. Aveline and Nelis as Representative Members of the Council. Drs. Pope and Thomas were elected Members of the Divisional Committee of Management.

The following were elected Members of the Association: A. D. Clanchy, L.R.C.P., and S.I., Fourth Assistant Medical Officer, Devon County Asylum, Exminster (proposed by Drs. A. N. Davis, Eager, and Blachford); C. Murphy, M.B., B.Ch. (N.U.I.), Third Assistant Medical Officer, Devon County Asylum (proposed by Drs. A. N. Davis, Eager, and Blachford); Walter H. Smith, B.A., M.D., B.Ch. (Dublin), L.M., Rotunda, Senior Assistant Medical Officer, County Asylum, Shrewsbury (proposed by Drs. Gemmel, Stanley Hughes, and Guthrie Blandford).

The date of the Autumn Meeting was fixed for Thursday, October 22nd next, and the Spring Meeting for April 22nd, 1915.

A letter was read from the Chairman of the Board of Control, addressed to the Secretary of the Medico-Psychological Association, respecting a grant from the Treasury towards pathological research, and the Hon. Div. Secretary was instructed to find out how much support could be relied upon from the various asylums in the Division with a view to obtaining a portion of the grant mentioned. A meeting on the subject to be arranged for, and the information obtained discussed thereat.

Dr. Richard Eager read a paper on "The rôle of Hypnotics in Mental Disease" (see p. 461), and this was discussed by Drs. Braine-Hartnell, Fenton, Walford, and Bullen, and Dr. Eager replied.

Owing to the lateness of the hour, a paper by Dr. Bullen on "Freud's Interpretation of Dreams" had to be postponed until the next meeting.

The meeting closed with a vote of thanks to Dr. Braine-Hartnell for his hospitality.

## NORTHERN AND MIDLAND DIVISION.

THE SPRING MEETING of the Northern and Midland Division was held, at the kind invitation of Dr. Edgerley, at the West Riding Asylum, Menston, on Thursday, April 30th, 1914.

President: Dr. S. Edgerley.

The following nineteen members were present: Drs. T. S. Adair, H. R. Cross, H. Devine, G. Dickson, S. Edgerley, F. W. Eurich, J. R. Gilmour, E. G. Grove, D. W. Hunter, G. R. Jeffrey, T. Johnstone, H. J. Mackenzie, H. D. MacPhail, J. M. Mathison, J. E. Middlemiss, B. Pierce, W. Vincent, C. W. Vining, R. C. Walker. Visitors: Dr. W. H. Robinson, Dr. R. R. Kirwan.

(1) The minutes of the last meeting were read and confirmed.

(2) A ballot was taken for Charlotte Murdoch Birnie, M.D., Ch.B. Edin., Assistant Medical Officer, The Retreat, York. *Proposed by* Drs. Pierce, Mackenzie, and Adair.

Charles Wilfred Vining, M.D., B.S. (Lond), M.R.C.P. (Lond.), D.P.H., Assistant Physician, Leeds General Infirmary, 40, Park Square, Leeds. *Proposed by* Drs. Edgerley, Walker, and Adair, as ordinary Members of the Association and they were unanimously elected.

(3) Dr. T. Stewart Adair was re-elected Secretary to the Division, *proposed by* Dr. Pierce, seconded by Dr. Vincent.

(4) Drs. H. Devine, A. R. Douglas, and J. R. Gilmour were elected representative



members of Council for the ensuing twelve months, *proposed* by Dr. Vincent and seconded by Dr. Mackenzie.

(5) The kind invitation of Dr. Græme Dickson to hold the Autumn Meeting at Wye House, Buxton, on October 22nd, 1914, was cordially accepted. Dr. Thomas Johnstone then invited the members to Harrogate for the Spring Meeting of 1915. He could not invite them to an asylum, but he would be pleased to entertain them in Harrogate. This was accepted, and the thanks of the Meeting were accorded him for his kind offer. The date of this Meeting was left to the Secretary to arrange.

(6) Dr. Edgerley then read a very interesting paper on "The Alleged Increase of Insanity," taking a very optimistic view of the subject. He stated that his paper only dealt with the north part of the West Riding, the area, consisting of manufacturing cities and towns and agricultural districts, from which Menston Asylum draws its patients. Statistically the West Riding occupied a very favourable position as regarded sanity. The first point to be settled was—What was meant by an increase in insanity? It might signify an increase in the total number resident, an increase in the number of annual admissions, or an increase in the annual number of first admissions. The last would appear to be the really important aspect of the question. "Are people becoming more liable to insanity?" had also to be considered. He thought the total increase in the asylum population depended on the relation of the output to the intake; we should therefore not see a reduction until we could reduce the intake and increase the output. Can anything be done to diminish the incidence of insanity? Four great causes are being grappled with, poverty, ill-health, excessive indulgence in alcohol, and preventable contagious diseases. He thought it was possible to exaggerate the influence of hereditary predisposition. His conclusion was "that in this part of the West Riding, whatever bald statistics may appear to show, insanity was not in the real sense increasing, indeed there was every reason to hope and expect that it would decrease."

An interesting discussion followed, in which many of the members took part. The main questions were: Was epilepsy increasing or decreasing? Did the decreased infantile mortality mean an increase of insanity, or were we saving children for them to become insane later? One member considered that the tendency was for insanity to increase in view of the reduced number of children, more especially in middle-class families.

(7) Dr. Pierce then opened a discussion on the "Treatment of Incipient Insanity." This had to be considered under two main heads, viz. in the case of those able to pay, and those unable to pay for their treatment. He thought some new kind of institution would be required—that clinics attached to hospitals would be advisable—that the co-operation of hospitals, Boards of Guardians, etc. would be necessary. Institutions would have to be equipped with up-to-date methods of treatment, and suitable means of employment and recreation would have to be found for the patients. How to carry out all this would be difficult as the capital expenditure would be a serious item, and then, would the public support it? He, however, thought that something should be done in the way of erecting suitable sanatoria for the treatment of incipient cases.

Many interesting points were brought out in the discussion which followed.

The meeting closed with a hearty vote of thanks to Dr. Edgerley for his hospitality, and for presiding at so enjoyable a meeting.

#### SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Medico-Psychological Association was held in the Victoria Infirmary, Glasgow, on March 20th, 1914.

Present: Drs. Dods Brown, Carswell, Carlsson, Chislett, Clarkson, Hotchkis, Carlyle Johnstone, Kerr, Marshall, T. C. Mackenzie, Ivy Mackenzie, McRae, Roberts, Dunlop Robertson, Ross, Shaw, Taylor, Yellowlees, and R. B. Campbell, Divisional Secretary; Dr. Macgregor, Medical Superintendent, Victoria Infirmary, being present as guest.

Dr. Yellowlees was called to the chair.

The minutes of the last Divisional meeting were read and approved, and the Chairman was authorised to sign them.

Apologies for absence were intimated from Dr. Chambers, President of the Association, Drs. Soutar, Drapes, Keay, Mitchell, Easterbrook, Oswald, Havelock, Phillips, Carre, Parker, Turnbull, Tuach-Mackenzie, Alexander.

The Secretary submitted a letter from the relatives of the late Sir J. Batty Tuke, thanking the members of the Division for their kind expression of sympathy. Letters of acknowledgment were also intimated from Dr. Urquhart and Dr. Watson.

The Secretary reported that the Committee appointed at last Divisional meeting to consider the question of the proposed site for the new Reception Hospital in Edinburgh had made very careful inquiry into the matter, and that as a result of the inquiry it was considered that no good purpose would be served by interviewing the various interested authorities, and the Committee recommended that nothing further should be done.

Drs. G. Douglas McRae and Neil T. Kerr were unanimously elected Representative Members of Council, and Dr. R. B. Campbell was re-elected Divisional Secretary. Dr. T. C. Mackenzie was nominated as an Examiner for the Certificate in Psychological Medicine.

The following four candidates, after ballot, were admitted to membership of the Association :

(1) Campbell, Finlay Stewart, M.D.Glas., District Medical Officer, Glasgow. *Proposed by* Drs. Kerr, Dunlop Robertson, and Campbell.

(2) Clark, John N., L.R.C.P. & S.E., L.R.F.P.S.Glas., Assistant Medical Officer, Lanark District Asylum, Hartwood. *Proposed by* Drs. Kerr, Dunlop Robertson, and Skene.

(3) Roberts, Ernest T., M.D.Edin., D.P.H.Cantab., Chief Medical Officer, Glasgow School Board. *Proposed by* Drs. Campbell, Easterbrook, and Gostwyck.

(4) Abel, Williamina, M.D., D.P.H., D.Sc., Pathologist, Royal Asylum, Edinburgh. *Proposed by* Drs. Geo. M. Robertson, Ross, and Elmslie.

Dr. WHITEHEAD read an interesting paper on "Encephalitis accompanying the Uræmia of Pregnancy," which was discussed by Dr. YELLOWLEES and Dr. IVY MACKENZIE.

The meeting then adjourned for tea, which was kindly provided by Dr. Macgregor.

After tea, the members visited Dr. Ivy Mackenzie's wards, and Dr. MACKENZIE read an instructive paper on "Psychiatry in the Wards of a General Hospital," and he showed several interesting cases with mental symptoms, which were being treated by him in his wards.

As Dr. Yellowlees had to leave before the conclusion of the business, Dr. Carlyle Johnstone took his place in chair.

Votes of thanks to the Managers of the Victoria Infirmary, to Dr. Macgregor, and to Dr. Ivy Mackenzie for their hospitality, and for the trouble which had been taken to make such an interesting and successful meeting, and also to the Chairman for his conduct in the chair, concluded the business of the meeting.

Sixteen members afterwards dined together in the Central Station Hotel.

#### IRISH DIVISION.

THE SPRING MEETING of the Division was held on Thursday, April 16th, at St. Patrick's Hospital, Dublin. The following members were present :

Dr. Thomas Adrian Greene (in the chair), Dr. W. R. Dawson (Inspector of Asylums), Sir John Lentaigne, Dr. Drapes, Dr. Oakshott, Dr. Rainsford, Dr. O'Neill, Dr. W. Eustace, Dr. H. R. C. Rutherford, Dr. Keene, Dr. Redington, Dr. Leeper (Hon. Secretary).

The minutes of the previous meeting were read and signed, and letters of apology for unavoidable absence were read from the President, Dr. Hetherington, Dr. W. Graham.

The meeting next proceeded to elect an Hon. Secretary of the Division, two representative members of Council, and two examiners for the ensuing year. On a vote being taken, Dr. Rainsford was appointed scrutineer, and the following gentlemen were declared elected by the Chairman :

Dr. Leeper, elected Hon. Secretary of the Division ; Dr. E. D. O'Neill (Limerick) and Dr. O'C. Donelan (Richmond Asylum) were elected representative members of Council ; Dr. E. D. O'Neill and Dr. Redington (Portrane Asylum) were elected examiners for certificates of the Association.

The meeting next proceeded to fix times of meetings of the Division for ensuing year:

Autumn Meeting, Thursday, November 5th, 1914; Spring Meeting, Thursday, April 15th, 1915; Summer Meeting, July 1st, 1915.

It was decided to change the date fixed for Summer Meeting of this year from July 24th to July 2nd, subject to the sanction of the President, the meeting to take place at the Mullingar or Carlow Asylum.

On a ballot being taken, Dr. Norman Bell Graham, Assistant Medical Officer, Belfast District Asylum, was unanimously elected a member of the Association.

Dr. RAINSFORD next brought forward his notice of motion, drawing the attention of the members to the dearth of original papers presented during the past year, and to discuss a remedy for this defect.

The members discussed this motion very fully, and expressed themselves as most anxious to interest the younger members of the Division in the matter.

Dr. RAINSFORD pointed out that many assistant medical officers were possibly reluctant to write original papers, but would willingly attend the meetings and join in discussion upon clinical subjects, and he proposed that a discussion be opened at the Summer Meeting of the Division "On the Use of Hypnotics in the Treatment of Acute Mania," and that a circular notifying this be forthwith sent to all the members of the Division.

The Hon. Secretary was instructed to have this done, and all the members cordially endorsed the opinions of Dr. Rainsford and approved of his suggestion.

It was pointed out that much clinical material must exist in the larger asylums, now lost sight of, which, if properly utilised by the younger members, could be of great value to psychological medicine, and it was hoped that medical superintendents would place every facility in the way of their assistants in future for the carrying out of this much-needed work, and interest, so far as possible, the younger members in the work of the Association.

Dr. KEENE thought that Dr. Rainsford's suggestion was a good one, and said that the junior members did not care to write papers which would be discussed by senior and more experienced men, but could do good work in writing papers upon subjects connected with the amusements of patients, etc., and other matters with which they were occupied in asylum life.

Dr. DRAPES pointed out that there was great difficulty in getting permission to perform *post-mortem* examinations in Ireland, and hence the lack of elaborate papers, but all assistant medical officers could bring forward cases of clinical interest which occurred in their practice. A paper need not necessarily be a very learned or exhaustive one, but could deal with clinical aspects of cases which were of great interest and importance in the treatment of the insane.

The members next proceeded to discuss the effects of the Government of Ireland Bill upon the existing legislation regarding the superannuation of asylum officials which was adjourned from the Autumn Meeting.

It was decided to take no action at present, but that the Hon. Secretary was to keep the matter before the Division so as to secure existing rights of asylum officials, and bring forward the matter again at the July Meeting, so that a deputation be formed, if thought desirable, to interview the Irish Members of Parliament, and ascertain their views informally upon the subject.

Dr. W. R. DAWSON kindly delivered his lecture, illustrated by a fine series of lantern-slides, upon "The Boarding Out of the Mentally Affected."

The description of the system of boarding out, under suitable guardianship, of patients in Scotland was fully and clearly described, and numerous photographs of houses so used were exhibited upon the screen.

Dr. GREENE said he wished, as chairman of the meeting, to cordially thank Dr. Dawson for his kindly action in coming amongst them again and for his paper.

Dr. DRAPES said that all present felt a deep debt of gratitude to Dr. Dawson for coming amongst them and giving them such an interesting and instructive lecture. Ireland, he believed, was especially favourable to the boarding out of the many harmless imbeciles and demented in asylums. He believed that the Irish people would treat such cases kindly and well, but that he felt that cleanliness would have to be secured for these boarded-out cases, and that this might be a matter of difficulty. A contrast could be made between the condition of children reared in workhouses and those who were boarded out in Ireland, and the benefits to be

derived in these cases were marked and unmistakable in the case of boarded-out children. He wished to express his warm appreciation of Dr. Dawson's action in again coming amongst them, and the division owed him a debt of gratitude for his sympathy and co-operation with their work and efforts on behalf of the insane of the country.

SIR JOHN LENTAIGNE said he was personally interested in the matter, as he had much to do with the provision of suitable accommodation for patients under the Court of Chancery. It was most regrettable that Ireland had been excluded from participation in the benefits of the Mental Deficiency Bill, which was a most useful and beneficent measure. He hoped to see the boarding out of suitable patients carried out some time extensively in Ireland. He wished to thank Dr. Dawson for his valuable paper, and to congratulate the Division on the very remarkable communication they had just listened to.

Dr. KEENE and others having joined in the discussion, Dr. DAWSON said he felt it a privilege to come and again associate with his old friends. Their one object was the kindly treatment and care of the insane, and with these noble objects before them, which was their common bond of unity, it would always be a pleasure to come amongst the members of the Association.

As the discussion was of a lengthy character, the Chairman, with the kind sanction of Dr. Eustace, decided to postpone the reading of Dr. Eustace's paper, "Notes on Intestinal Auto-Intoxication," till the next meeting of the Division.

Dr. DAWSON proposed a vote of thanks to Dr. Leeper for his kind hospitality and for the entertainment provided for them, which was passed with acclamation, and Dr. LEEPER having replied that it would always be a great pleasure to him to entertain the Division whenever they wished to visit St. Patrick's Hospital, the proceedings terminated.

### THE ROYAL SOCIETY OF MEDICINE.

#### SECTION OF PSYCHIATRY.

Sir GEORGE H. SAVAGE, President, in the Chair.

A joint meeting of this Section, with the British Psychological Society, was held on Tuesday, March 10th, 1914, at 1, Wimpole Street, W. An important contribution was made on "The Definition of the Sexual Instinct," by Wm. McDougall, M.B., F.R.S., of which the following is a synopsis:

"The present condition of opinion on the problem of the nature and rôle of instinct in general, and of the sex instinct in particular, is chaotic among both academic and medical psychologists. This is largely due to the continued prevalence of two of the classical errors of nineteenth century psychology—namely, psychological hedonism and the doctrine that instinct is compound reflex action.

"Erroneous conceptions of the sex instinct fall for the most part into two classes: (1) Those which are unduly simple, representing the sex instinct as merely the tendency to respond to certain disagreeable, sense stimuli with movements which abolish the disagreeable and procure pleasurable sensations; (2) those which ascribe to the sex instinct a variety of mental and bodily processes which spring from other and entirely distinct roots.

"Of errors of the latter type, the commonest is that which confounds the parental with the sex instinct. This is due in part to loose and ambiguous usage of the word 'love,' and in part to certain similarities of the behaviours prompted by the two instincts respectively, and of the biological ends subserved by them; possibly, also, to some innate connection between them.

"In a similar way, modesty, jealousy, masochistic, sadistic, and other tendencies are by some authors attributed to alleged 'components' of the sexual instinct. The Freudian doctrine seems to comprise errors of both types.

"The alleged duplicity of the sex instinct (impulses of detumescence and of contraction) is an unnecessary assumption. But on its afferent or perceptive side the sex instinct is more highly evolved and complex than is generally recognised.

"The grounds of the assumption that the sex instinct is normally active from the earliest years of infancy will not bear examination. The awakening of the sex instinct normally begins about the eighth year and goes on until puberty is established. The criteria to be regarded in this connection."

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The discussion which followed showed the wide divergence of views which are held on the psychology of sex, and was contributed by Drs. Brown, Elder, Forsyth, Mercier, and Jones. Dr. McDougall replied.

A further joint meeting was held on March 24th, 1914, Sir George H. Savage again in the chair.

Dr. HENRY DEVINE contributed a paper on "The Biological Significance of Delusions," of which the following is an abstract:

Delusional formations fulfil a definite function, and constitute one method of adjustment to experience. The highest psychic operation is the adaptation of the individual to reality, the co-ordination between desires and circumstances. This high level of conduct cannot always be maintained, and there is a tendency to gratify desires by seeking refuge in inferior mental operations, such as day-dreams or reveries. Delusions have frequently the same function. They constitute a method of escape from reality in individuals who are unable to adjust themselves to external difficulties by efficient action.

It is by no means usual to establish an obvious correlation between external situations and the delusional content. The reason for this depends upon the fact that the individual suffering from such a disorder as dementia præcox, in which the delusions appear to be chaotic and meaningless, does not succumb to situations of any particular difficulty, but, owing to defects in his personality, he cannot adjust himself to quite ordinary situations. The delusions relate to internal conflicts, the nature of which is not apparent on the surface.

Details are given of the analysis of an actual case. It is shown that the patient, owing to unfavourable conditions in early life, exhibits a fundamental defect of psycho-sexual evolution which prevents him from reacting effectively to situations which present themselves. The patient becomes relatively isolated in the world, and is unable to get into contact with his surroundings. The complicated delusional formation which is evolved is shown to be an attempt at adjustment, each delusional thought having a definite purpose and individual insignificance.

Then followed a discussion on this communication, and on Dr. Rows' paper on "The Importance of Disturbances of the Personality in Mental Disorders" (reprinted in the Journal, page 192) by the PRESIDENT, and Drs. E. JONES, BROWN, and MITCHELL. Drs. ROWS and DEVINE replied.

#### NOTICE OF MEETINGS.

The Divisional Meetings are proposed as follows:

*South-Eastern Division.*—7th or 8th October, 1914 (St. Luke's Hospital); 28th or 29th April, 1915.

*South-Western Division.*—22nd October, 1914; 22nd April, 1915.

*Northern and Midland Division.*—22nd October, 1914; in April, 1915.

*Scottish Division.*—13th November, 1914; 19th March, 1915.

*Irish Division.*—5th November, 1914, Royal College Physicians; 15th April, 1915, near Dublin; 1st July, 1915.

#### APPOINTMENTS.

Branthwaite, R. W., M.D.Brux., L.R.C.P.Lond., M.R.C.S., a Medical Inspector under the Board of Control (Mental Deficiency Act).

Brown, Ralph, M.D.Lond., Senior Assistant Physician to Bethlem Royal Hospital.

Colyer, Claud G., M.R.C.S., L.R.C.P., L.D.S., Dental Surgeon to the Surrey County Asylum, Netherne.

Devine, Henry, M.D., B.S.Lond., M.D.Bristol, M.R.C.P., Medical Superintendent of the Portsmouth Borough Asylum.

Evans, Albert Edward, M.B., B.S.Lond., a Medical Inspector under the Board of Control (Mental Deficiency Act).

Gill, S. E., M.D.Lond., a Medical Inspector under the Board of Control (Mental Deficiency Act).

Phillips, J. G. Porter, M.D.Lond., M.R.C.P., Resident Physician and Medical Superintendent to Bethlem Royal Hospital.

Thomson, A. Maurice, M.B., B.Ch., B.A.O., R.U.I., D.P.H.Camb., Assistant Medical Officer, Middlesex County Asylum, Napsbury, St. Albans.

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for our meeting being held in Norwich, that a historical retrospect not only of this asylum but of psychiatry and mental hospital administration for the past hundred years would be of more immediate interest and profit.

The commemoration of a centenary is a hollow and useless proceeding unless, from a study of the period under consideration, we gather and apply the wisdom it teaches, and we realise that it is merely a *point d'appui* for future advance and extension. We may also derive some personal consolation, and an antidote to pessimism, when we survey a relatively lengthy period of human endeavour like a centennium, for, while our every-day progress seems dishearteningly slow, we are cheered to find evidence that we really are moving forward, and have a better understanding of the problems which confront us than had our predecessors of one hundred years ago.

It is difficult for us, in this year of grace 1914, to realise fully the condition of affairs a hundred years ago as affecting the country in general, and public institutions in particular. Most striking perhaps was the absence then of that humanitarian spirit which, during the century under review, has evolved so rapidly—according to many publicists, perhaps too rapidly. A century ago, the public conscience had only just been awakened to the horrors of slavery, the state of our prisons and schools, and the sufferings of women, children, and animals.

Many philanthropists, as, for instance, Mrs. Fry, Dickens, Shaftesbury, whose pioneer work is the basis of our present humanities, were, in 1814, only infants or young adults; Pasteur and Lister, the founders of our present pathology were unborn; Bismarck had not yet entered the world on which he was to leave such an impress; the pioneers of democracy, Bright and Gladstone, were prattling children; Waterloo had yet to be fought, although Wellington's genius in the Peninsular War culminated at Toulouse exactly one hundred years ago, and presaged in a measure the final overthrow of Napoleon a year later.

Further, coal-gas, mineral oils, and electricity were unknown, or known only as scientific toys; there were no railways, steamboats, telegraphy, telephony, or photography; anæsthetics, the clinical thermometer, and stethoscope were yet to be discovered; and there were but few newspapers.

I venture to remind you of these historical data to aid you

in forming some conception of the state of affairs which existed at this period. It is perhaps only when we have tried to picture to ourselves the absence of those means of human intercourse, and aids to progress now become so indispensable, that we can realise the absence of the humanitarian public spirit, the striking growth of which during the past century I have alluded to. Undoubtedly it existed in the individual, else had the Sermon on the Mount been preached in vain, but propagandism had not acquired its present powers to stimulate the public mind.

Looking back, then, at this period, we can readily understand the almost total absence of provision for the insane poor, and of allied social philanthropies, yet our daily association with the present medical and legal care of the insane renders it difficult for us to realise that, until about 1812, there was not a single public county or borough asylum for the insane in England.

True, there were several hospitals for the mentally afflicted founded by Royal or private benevolence, *viz.*, the Royal Hospitals of Bridewell and Bethlem, St. Luke's Hospital in London, the Quaker foundations of the Retreat and Bootham at York, and the Bethel Hospital in Norwich, the latter founded two hundred years ago, or one hundred years prior to the period we are now considering. I may perhaps be allowed to digress a few moments to refer to this latter ancient local charity, to visit which Dr. Fielding, the present Medical Superintendent, cordially invites any of you who may be so desirous during your stay in Norwich. It was founded by Mrs. Mary Mann or Chapman in 1713, and the terms of her will show that she was induced to found an institution of this nature by the fact that relations both of herself and husband had suffered from mental incapacity, and "in compassion to the deplorable state of such persons as are deprived of the exercise of their reason and understanding." She further stated that it was for those who were afflicted with lunacy or madness, and not for such as are fools or idiots from their birth; indeed, the tenor, if not the wording, of her will was that it was to be reserved for what we should now term "recoverable cases," perhaps the earliest evidence we have of the idea that insanity was a recoverable affliction. A provision also occurs in this remarkable will to the effect that, should any inmate be restored in mind, he shall forthwith be removed, or "put out," as it is worded. Sir Benjamin Wrench, a celebrated



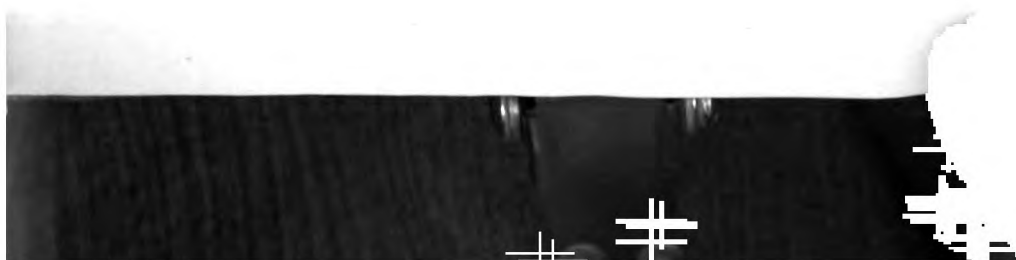
Norwich physician of the time, was appointed the first visiting physician, whilst one Robert Walker, was appointed master or keeper, as he is alternatively called, and received £30 per annum, or less than the wage of the junior attendant of to-day. It may be that in those times, as now, the right sort of person could not be got for the wrong sort of salary, as Mr. Walker first had his salary reduced 4s. per week and later on was dismissed for his mismanagement and bad treatment of the lunatics. The archives of the Bethel Hospital teem with particulars of archæological interest to psychiatry, but beyond mentioning that in 1729 the maintenance rate was fixed at 3s. per head per week, and for those who brought their own bedding 2s. 6d., I must refrain from further details.

With these exceptions, then, there were no public institutions for the insane in England. As regards Scotland and Ireland much the same state of affairs existed, the famous Edinburgh Royal Asylum at Morningside being established in 1813.

The condition of the mentally afflicted one hundred years ago, and previously, is one of the dark chapters of history, and no better description of the deplorable conditions at this period can be found than in the "Report, together with the minutes of evidence, of the Committee of the House of Commons appointed to consider of provision being made for the better regulation of madhouses in England," published in 1815. I have no wish to slay the slain, or to make newspaper copy of the horrors described in that Report, which is of the greatest possible interest, and doubtless many of the seniors present are cognisant of its contents. At the same time, while commemorating the centenary of this Asylum, my retrospect would lack completeness unless, even at the risk of wearying you, I repeated some of the purple patches contained in this Report. I must remind you that this Report was ordered by the House of Commons to be printed in July, 1815, or the year after this Asylum, in which you are now meeting, was opened. The great majority of the houses, where the following state of affairs was found, have long ceased to exist. They were mostly private "mad-houses" owned by private persons, many of whom were medical men, the only public institutions referred to in the Report being the old Bethlem Hospital, then on the point of removal to its present site at St. George's-in-the-Field's, St. Luke's Hospital, the insane ward of Guy's Hospital, and the Quakers' Retreat at York.

It is gratifying to know that, even in those dark days, there were a few bright spots amid the pervading gloom and misery, for, in addition to these public institutions, there existed the Bethel Hospital, Norwich, and a few private houses, such as Dr. Finch's at Salisbury, Dr. Fox's at Brislington House, where the instinctive humanity of those in command would not tolerate the vice, crime, cruelty, and filth rampant generally in madhouses. Firstly, then, we must realise there was no certification or notification of the insane as now understood. The unfortunate inmates of madhouses were mostly persons above the pauper and poorer classes whose relations, often interested persons, could pay the proprietors, or keepers as they were called, some payment for their keep and custody. Such legislation as there was did not apply to paupers.

Most imperfect, where they existed, were the records kept of admissions, discharges, and deaths. Numerous instances are given of what are euphemistically called disappearances of individual inmates, such persons probably succumbing to the rigours of their incarceration. The powers of the Commissioners were so limited as to render their visits futile, except in the important direction that, having seen what they saw, it enabled them to give most valuable evidence before the Select Committee. These Commissioners were appointed by the College of Physicians, and all five of them, together with their Secretary, were Fellows of the College. Their field of operation was restricted to London and Middlesex; they had no power to revoke the licenses of even the vilest of these dens, no power to discharge any inmate, no plans of the buildings they inspected, so that it was frequently questionable if they saw the whole of them or not, no returns or records whereby they could check the identity, or even the number of inmates, and yet they exercised manfully their duties as inspectors, even to the extent of hiring a hackney coach or chaise instead of using their own carriages, so that their visit to the particular madhouse might be a surprise one. The great majority of the inmates in those days were mechanically restrained. Many were chained to the stone floors or walls of their cells, to the extent that all movements of their limbs were limited, or to the bars of a cage, or to the heavy wooden trough bedsteads, and this by no means occasionally, or during maniacal excitement, but continuously for years, often for life. We read of



learned discussions on the comparative efficacy of chains and handcuffs, iron girdles, collars and strait-waistcoats. The Commissioners record their opinion that handcuffs and chains are preferable to strait-waistcoats, as being less heating! The notorious case of Morris, an inmate of Bethlem Hospital, which institution, by the way, was not included in the purview of the Commissioners, seems, as recorded in this Report, specially revolting to modern humanity. He was alleged to be so dangerous that, before anyone could enter his cell, a chain rivetted to an iron collar round his neck, was pulled through a hole in the wall of his cell from an adjoining cell till his head and body generally were drawn up against the hole in the wall, while the "keeper" cleared his cell of the verminous, wet, and filthy straw. For many years also he was confined in a sort of iron cage, which cabined, cribbed, and restricted all necessary and natural movements of his body and limbs, and this apparatus seemed to have been highly approved of, not only by its inventors, but by many persons of position and influence who had seen it. Nowadays, we all know of the skilled nursing and attention lavished in our modern mental hospitals on those of the insane who are insensible to the calls of nature. The sanitary arrangements, or rather the want of them, in these ancient madhouses must have beggared description. Many instances are given in the Report of justices of the peace, humanitarians, commissioners, and other persons visiting these places being repeatedly and literally sick, the less determined even fleeing as from the plague.

The overcrowding must have been terrible, one instance being given of thirty women, many of them naked or covered with a single garment, called a blanket-gown, being huddled in a straw littered room 23 ft. long by 18 ft. wide; the person reporting his visit to this room said the stench was so awful that, on entering, he immediately ejected his last meal.

At St. Luke's Hospital, which was run on comparatively enlightened lines, the management was proud of the fact that the wooden trough bedsteads were lined with sheet lead, with a pipe therefrom to a gully in the floor of the cell which kept the straw bedding from getting foul and sodden.

The cold, too, in the winter months must have caused severe hardship; there were no facilities for heating, no warm baths, no glass in the small windows of the damp and dark cells, yet

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forty-eighth year of the reign of George III. An Act, usually referred to as "Wynne's Act," which bore the significant title of "an Act for the *better* care and maintenance of lunatics being paupers or criminals in England" was passed, and it was the first piece of legislation in favour of pauper lunatics. The opening preamble of this Act reads as follows: "Whereas the practice of confining such Lunatics and other insane persons as are chargeable to their respective parishes in Gaols, Houses of Correction, Poor-houses, and Houses of Industry, is highly dangerous and inconvenient, and whereas it is expedient that provision should be made for the care and maintenance of such persons, and for the erecting of proper houses for their reception . . . it shall be lawful for the Justices assembled in Quarter Sessions of the County to take into consideration the expediency of providing a Lunatic Asylum in such County."

Wynne's Act, and further amending Acts in 1811, 1815, 1819, 1824, etc., were the foundation on which the present lunacy administration of this country is based. In the Act of 1808, there are many sections of interest, *e.g.*, sect. 22 provides that the weekly rate *per capita* shall in no case exceed 14s., and in sect. 26, there is a proviso that lunatic asylums shall be exempted from the incidence of the window tax, then in force, and in it we can also discern the origin of many of the archaic peculiarities of the present lunacy law.

Within ten years after the passing of the principal Act in 1808, only five (!) of the fifty-seven counties in England and Wales, *viz.* Nottinghamshire, Norfolk, Lancashire, Staffordshire, and Yorkshire, had taken any steps regarding it. Elsewhere, the same horrible conditions described in the House of Commons Committee's Report obtained, and thus the Report concludes with the following paragraph: "Resolved that the Chairman be directed to move the House that leave be given to bring in a Bill to amend and *enforce* the provisions of the Act of 1808." This was done in 1815, in spite of the country being involved at that time in the final struggle against Napoleon in Belgium. Yet, how striking is the fact that as regards London it was not until twenty years after this that Middlesex set about building an asylum for the insane poor, which resulted in Hanwell being opened in 1831, Surrey opening Wandsworth ten years later still, whereas Nottingham-

shire, Norfolk, Lancashire, Staffordshire, and Yorkshire, immediately on the passing of the Act of 1808, took steps to provide what are now the public asylums of those counties.

I have here a chronological list of the date of opening of every asylum in England. It would be tedious, however, to recite the entire list, but the following are the twenty asylums which had been opened by the year 1850 :

Year of opening.	Name of Asylum.	Year of opening.	Name of Asylum.
1812	Nottingham County (Sneinton, now disused).	1829	Suffolk County.
1814	Norfolk County.	1831	Middlesex County (Hanwell).
1816	Lancaster County.	1832	Dorset County.
1818	Stafford County.	1833	Kent County (Barming Heath).
1818	York, W.R., County (Wakefield).	1841	Surrey County (Wandsworth).
1820	Cornwall County.	1845	Salop and Montgomery County.
1820	Lincoln County.	1846	Devon County.
1823	Gloucester County.	1846	Oxford County.
1829	Chester County.	1847	York, N.R., County.
		1848	Denbigh County.
		1848	Somerset and Bath (Wells).

It can readily be understood, from the past history of the madhouses in existence early in the nineteenth century, how it came about that the legal aspect of the subject became all-important, and how Wynne's Act and its successors concerned themselves entirely with the civil rights of the individual afflicted with insanity. At all costs an end had to be made of the iniquitous methods of admission, incarceration, and detention.

At this time insanity, if no longer considered to be demoniacal possession, as in the Middle Ages, had chiefly a psychological interest, *sui generis*, and was certainly not considered to be a manifestation of a diseased nervous system ; or, to state the case in a different way, while the centuries old proposition, "*Nulla Mens insana nisi in corpore insano*" was freely admitted, yet the theories of the connection between general diseases and mental symptoms were so loose as to exercise little or no influence on the principles or practice of the time until many years later.

Medicine seemed to stand by helplessly, and, although I fully appreciate the noble efforts to improve and make the best of existing conditions on the part of a few pioneers in this country, and of the great French physicians Pinel and Esquirol, I am sorry that I cannot urge that the great reforms which came about were due to the initiative of our medical predecessors, but rather to the persistent and unwearying

labours of lay philanthropists who enlisted the assistance of the Legislature. And this appears to be always the case, for legislation only begins long after individual philanthropy has done its pioneer work, and educated public opinion, as in the case of the establishment of mental deficiency homes and the Mental Deficiency Act. Hence it came about that all lunacy legislation has confined its measures to the safeguarding of the civil and legal rights of the subject. Indeed, lunacy legislation, with all its attendant rules and regulations, is directed rather at the keeper than at the lunatic, and in this more enlightened and humane age we feel this to be somewhat of an anachronism. The law does not permit us to treat the mentally disordered as we would other sick persons; they must be first labelled and certified by legal procedure; they must be deprived of all civil rights, and must incur the odium and stigma of being certified as lunatic before we are allowed to treat, institutionally at all events, the symptoms arising from an exhausted, poisoned, injured, or defective nervous system.

Looking back, we can explain and excuse the purely legal outlook or standpoint of lunacy legislation, but at the same time, looking forward, we can hope that shortly it may prove not to be beyond the wit of man to devise a system whereby, while duly safeguarding what has been termed the modern fetish, the "liberty of the subject," we shall be enabled to treat early, incipient, or unconfirmed mental disorder, at all events without those so affected having first to pass through the dread portals of the law. The inscription, "*Lasciate ogni speranza voi ch' entrate*," which Dante pictures as being over the gateway to Hades, might well have been written over the entrances to the madhouses of 1814, and would not be very much out of place on the title page of the Lunacy Act. Various amending Acts to the 1808 Act were passed, and at length, just one hundred years after the first crude attempt to deal with lunacy, a very important Act was passed in 1845, one of the early statutes of Victoria's reign: Cap. 8 and 9, 100 and 112. The principal effect of this Act was to establish the Lunacy Commission on the basis which existed for sixty-eight years until 1913, when it was reorganised as the Board of Control under the Mental Deficiency Act. The Commissioners were called the Metropolitan Commissioners until 1845, when their authorities and powers were

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Great Seal by warrant under the sign manual. The jurisdiction was placed on its modern basis in a number of Acts of last century. The jurisdiction of Judge in Lunacy under the Lunacy Acts (sec. 108 of the 1890 Act) is exercised by the Lord Chancellor, or one or more of the Judges of the Supreme Court. A Judge in Lunacy may make orders for the custody of lunatics, so found by inquisition, and the management of their estates, and the jurisdiction of the Judge in Lunacy may be exercised by the Masters, whose orders take effect unless varied or annulled by the Judge. The office of Master in Lunacy was practically created by the Lunacy Act of 1842, which provided for the appointment of "Two Commissioners in Lunacy," to whom the duties of existing Commissioners, the Masters in Chancery, and the Clerk of the Custodies in regard *de lunatico inquirendo*, etc., were allocated. This principle was reaffirmed, and the style "Master in Lunacy" adopted, in the Act of 1845, and has continued in the Act of 1890. I might here record that, in the Amending Act of 1853, legal sanction was first given to the discharge of patients on extended probation, and to the granting of pecuniary allowance to the patient while absent on such probation, which is a boon, and nowadays generally adopted.

After the Act of 1845, there were various minor amending Acts passed in 1853, 1855, 1862, 1865 (in 1878 a Select Committee of the House sat), 1882, and 1885. In 1888, the County Boards Bill, as it was at first called, and afterwards known as the Local Government Act, or Ritchie's great Act, was passed, the chief feature of which as regards lunacy was the transference of the management of public asylums from Quarter Sessions, vested in them by the 1808 Act, to the County Councils.

I remember at the time how apprehensive most of us were that this transference from the magistracy to popularly elected anybodies would be fraught with danger to the welfare of asylums and the insane, that the management might degenerate to the Poor-law institution level, or at all events in a retrograde direction rather than forwards towards the hospital ideal. The experience of twenty-five years, however, has shown the falsity of this apprehension, due largely to the fact that the more efficient of the former members of the Committees of the Visiting Justices were elected to the new Councils, also to the

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hundred years ago and the principal legal enactments for its betterment, and having made our acknowledgments to the law for its immeasurably beneficent influence, it will be more interesting and profitable for us as medical men to pass on to consider shortly the advance made in the knowledge and treatment of insanity during the past century.

Both prior to, and since, 1814, the treatment of the symptom-complex which we call insanity, has been based generally on the pathological knowledge of the time. This is rational, even though the treatment may have been based on knowledge which subsequently turned out to be ignorance. When insanity was looked upon as being due to demoniacal or other forms of possession, exorcism, beneficent or punitive, was the remedy; when later, which was so about the date we are commemorating, the so-called humoral pathology was in vogue, which taught that vapours and humours distilled by various abdominal organs, the spleen for choice, suffused and affected the brain, then bleedings, cathartics, and starvation were the main remedies, although certain sedatives, opium and henbane, were also used to dull the frenzy caused by "heating humours." Thomas Hardy, in *The Dynasts*, illustrates the prevailing practice in 1810, and portrays King George III, during his mental aberration, making a pathetic appeal to his physicians not to bleed him. Thomas Hardy puts the following words into the mouth of one of the King's physicians, Dr. Willis, in reply to the King's appeal (Part 2, Act vi, scene 5), "It is extraordinary what aversion he has to bleeding, the most salutary remedy fearlessly practised, he submits to leeches as yet, but I won't say that he will for long without being strait-jacketed." Whereupon the apothecary in attendance advised, "You should take twenty ounces, doctor; indeed go bleeding till he's unconscious, and the watering pot would do good again, not less than six feet above his head." If his Majesty were thus treated by the Court physicians of the day, we can surmise how his Majesty's lieges fared.

Until about 1837, medicine seems to have made little or no advance in the treatment, or even the management, of insanity, physickings, bleedings, and the very general use of mechanical restraint are all we read of as being used to subdue or coerce the poor lunatic; indeed, during the reigns of George IV and William IV, the arts and sciences, including medicine, not to

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ficence and soundness, no less than its humanity, placed beyond dispute.

We like to honour the actual pioneer or discoverer of any great principle, and while forty years ago there were acrimonious discussions as to who was the originator in this country of non-restraint and all that it connotes, I have no doubt whatever, after an impartial study of the history of this reform, gathered from all available sources, that Dr. Gardiner-Hill is entitled to the honour, with the reservation that certain physicians had more or less much reduced both the amount and severity of mechanical restraint, notably the Tukes at the Quaker Retreat, York.

While no progress was made in the medical treatment or management of the insane before the non-restraint era of 1835, it must not be forgotten that many workers were groping diligently in the dark for some clue to the nature of insanity, its ætiology and pathology. A study of the history of the subject during the first half of the nineteenth century reveals the work of many distinguished writers who at least described its various forms, and devised many classifications, some based on the psychological symptomatology, and others attempting a somatic classification, only a little less bewildering and unsatisfactory than that in vogue to-day. General paralysis was first described and christened by Calmeil in 1828, his attention having been drawn to this remarkable disease by the description of an apparently distinct variety of mental disorder with paralysis by Dr. John Haslam in 1826. This information I gather from Dr. Daniel Hack Tuke's writings, although it does not accord with Dr. Robertson's recent article on general paralysis of the insane in the *Journal of Mental Science*. The clinical output was great, but it could not be said that any material advance was made in the pathology or therapeutics of insanity. At the same time, gradual improvement took place in the general hygiene, comfort, surroundings, and the so-called "moral" treatment of the insane. Immense benefits were derived from occupation, amusement, and generally by placing the patient in such environment that the *vis medicatrix nature* had every chance, whereby undoubtedly fewer cases died or became chronic. This degree of advance might be likened to the present day sanatorium treatment of tuberculosis.

Orde's discovery of the nature of myxœdema in 1884 was

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Again, the young science of ante-natal pathology has clarified and widened our conception of all the forms of congenital defects. The discoveries of embryology and ante-natal pathology may modify, to an extent at present undreamt of, our views on heredity, and it is being already asserted that the germ-plasm, Weissmann's continuous chain of vitality, is in itself the same and unalterable throughout successive generations, and that the apparent modifications are due to the influences, benign or adverse, which affect the embryo itself in intra-uterine life and not the germ-plasm.

Again, the principle of resistance to bacterial or toxic invasion, the vulnerability of what Mott calls the *locus resistantiae minoris*, explains to us how the virus of syphilis, by weakening the natural resistance or reaction defence of the nervous elements, renders them prone to bacterial invasion and toxæmias, the exact nature of which is as yet doubtful, though we know they result in the dissolution of the grey matter of brain and cord.

The enormous advance made in general histology since the discovery by Golgi and Nissl of the selective power of staining media in dead, and, more recently, in living tissues is a further instance of general scientific progress aiding psychiatry. What hopeful vistas of increasing knowledge and power do such discoveries hold out to us compared to the barren metaphysical and psychological theorems of half a century ago, some of whose ghosts in brand new shrouds are being enticed back to life in quite recent years. Speculations as to the nature and origin of what is called mind, however interesting they may be in themselves, are fortunately not essential problems to us as psychiatrists. We are concerned with the machine whose receptions, interactions, and expressions manifest mind, whether, as has been often said, mind is a secretion of the brain, as bile is of the liver, to me an unthinkable proposition, or whether the brain is merely the tangible medium through which some unknown and unknowable power, or spirit, which we call mind manifests itself.

The knowledge of the ætiology, pathology, and therapeutics of insanity has advanced, and can only advance, on the fundamental view that the symptom-complex insanity is a disorder or disease of the brain. I do not think this can be asserted too often in these days of fads and 'isms, such as faith-healing, Christian science, etc.

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centennium under review, the activities in psychiatry have been so numerous and varied that even a summary will, I fear, make some claim on your time and attention, but the main advances must be outlined. The postulates at the beginning of this period were, as previously detailed, a fully protective legislation, and more than comfortable accommodation for about a hundred thousand persons suffering from a baffling and mysterious disease. Obviously the time had arrived for inquiry and research, for a much clearer realisation of the medical ideal—the prevention and treatment of the disease. This was ably urged in the Presidential Address of 1889, by the then President, Dr. Hayes Newington, fortunately still with us to be the guide, philosopher, and friend of our Association. He took as his text one that has often been preached from during the twenty-five years which have elapsed since, *viz.*, a closer union between the general hospital and its staff and the asylum and its staff, and *vice versa*, for the benefit of their mutual aims.

Alas, for this remaining apart, for which there are many explanations, but few valid excuses. I would like to mention one not often alluded to. The ordinary medical man, and even the hospital physician, has the same conception of an asylum as the layman, or even a more mistaken conception than an instructed layman, such as a member of a visiting committee. He looks upon the asylum as a sort of glorified workhouse, containing hundreds of weird, hopeless people, freaks and cranks in fact, who, instead of being, as in a hospital, in bed, or cured, or dead and comfortably preserved in formalin in the museum, are up and about, tilling the soil, washing clothes, dancing, or playing games. How can he associate this with the hospital idea? Even the words patient or nurse do not come readily to his lips—inmate, lunatic, warder seeming more appropriate. The recent and recoverable cases, on whom is lavished more than ordinary hospital care in the way of clinical investigation and nursing, hardly exist in his estimation. He knows vaguely that occasionally people are discharged, “let out,” as he calls it, of whom many return. The medical spirit in a large general asylum is not outwardly evident, and so to both the layman and the ordinary medical man the asylum is a place, *sui generis*, having little in common with a hospital.

I have spent years of my life instructing and trying to enlighten medical men and laymen that there is a medical as

well as a custodial and social side to asylum life, but it is rather a hopeless task. The only antidote to this misconception is the establishment of psychiatric and mental hospitals devoted solely to recent and recoverable cases, preferably as separate institutions, or, if on an asylum estate, wholly separate and detached from the general buildings. Every little, however, helps in our educative propaganda, hence the increasing adoption of the appellation "county or borough mental hospital" for our public asylums, and I propose in commemoration of our centenary to substitute here as far as possible "hospital" for "asylum" on all our forms and correspondence. The objectionable name "Pauper Lunatic Asylum" could well be abolished officially and generally as a designation of our "County Hospitals for the Insane."

To proceed with my review. In July, 1890, a great step forward was taken at the initiative of our Association, by the adoption of a scheme for the systematised training of our male and female nurses, and the granting of certificates of proficiency in mental nursing. Here, again, one must mention the good work Dr. Newington has done. He was chairman of the committee charged with the evolution of this great advance. Nearly twenty-five years' experience has demonstrated the success of the movement, for where formerly there were but scores of candidates who offered themselves for the examinations, there were at the last examination 2,096 candidates and no fewer than 11,421 certificates of proficiency have been granted. While the authorities who control general nursing cannot agree as to the advisability even of registration, our Association has successfully surmounted and solved for itself this important question, and now holds a one-portal, uniform, "Staats Examen" for mental nurses throughout Great Britain, Ireland, and some of our Colonies, and officially registers them. The benefits accruing to the insane both in institutions and in private, also to the medical officers and nurses, are too obvious to need extended comment.

Another noteworthy advance during the last quarter of a century has been the establishment of pathological laboratories, to begin with, in the asylums locally, such as occurred at Wakefield, Morningside, Murthly, Lancaster and elsewhere; but a great extension of this local effort was made when the County of London established at Claybury a principal or

central laboratory for the London Asylums under the charge of our distinguished colleague, Dr. Mott. By centralising the work, a highly skilled staff, as well as a well-equipped laboratory, can be maintained, and no one who has read the valuable reports issued from that laboratory could fail to find justification for its creation. The Scotch Asylums, by founding a central laboratory in Edinburgh, were not long in following suit. It remains a vexed question to what extent separate laboratories at individual asylums should be maintained, and there is no statutory power for local authorities to combine for this purpose. While at, or near, teaching centres at all events, a local laboratory has proved successful, as, for instance, at the Cardiff Mental Hospital, the provision of such at asylums which are far from the stimulus and clinical atmosphere of medical schools, such as those situated in Devon, Cornwall, Sussex, or Norfolk, would be in my opinion a waste of money which could be put to a better purpose. By laboratories, of course, I mean research laboratories, under a trained director, with experimental resources, etc., not merely the limited equipment for clinical investigation which should be provided in all medical institutions.

It is a noteworthy sign of the times, as indicating the increasing medical spirit in our asylums, that, since 1907, the Board of Control, in its annual reports, has been able to publish a lengthy synopsis of the research and special investigations made in English and Welsh asylums. As germane to this, we must note that, for the first time in history, a grant has been made of public money by the Government for research in psychiatry, and that our Association has been invited to make suggestions as to the most profitable directions in which it can be expended. Yet again, you have to-day followed the example of the British Medical Association, and established a special committee, which shall concern itself entirely with the purely medical and scientific aspects of our work, including collective investigation and research.

As chronicler, I must utter a few words regarding another step forward made by our Association during the period under review, *viz.*, the action it has taken to successfully induce several of our great universities to establish a diploma in psychiatry, as evidence or hall-mark of post-graduate study and training on the part of our younger colleagues. This was the

outcome of two years laborious work of a committee of this Association, to whom was entrusted the necessary pioneer work, under the able and indefatigable chairmanship of a former occupant of this chair, Dr. T. W. McDowall. Another former president, Dr. Soutar, said truly, in his Presidential Address in 1912, that the mere possession of a diploma in psychiatry was only part evidence of the qualities necessary for a successful physician to the insane ; at the same time, I am sure he would be the first to admit that all his views on the subject are equally applicable to the desirability or not of the acquisition of any medical or nursing qualification.

A review of the past quarter of a century would be incomplete without a passing reference to the literature of psychiatry. In the early part of this period the eminently sound clinical works of Hack-Tuke, Blandford, Savage, and Clouston were available to us, while those of Maudsley and Mercier appealed to us more from the philosophical and psychological standpoint. Krafft-Ebing, Bloch, and Havelock Ellis shed light on the apparently inexplicable and distasteful phenomena of aberrations of the sex instinct. About the beginning of this century the great German clinician, Kraepelin, became famous by his work on primary dementia, under the names of katatonia and hebephrenia, also by his view that mania and melancholia, and even stupor, were not clinical entities, but merely the manifestations of the same essential morbid state, which he termed "manic-depressive insanity." Many of us must have felt the want of a comprehensive and expressive term such as this when trying to classify cases presenting in turn periods of exaltation and depression, which, on that account, would not fit in with any of the varieties of insanity detailed in our own unsatisfactory classification.

I suppose even a President may be allowed views with regard to the many excellent treatises and text-books on psychiatry of the present day, so I would like to name the two which I personally have found the most illuminating and helpful. These are Lugaro's great work, *Problems in Psychiatry*, made available to English readers in the translation by our colleagues Orr and Rows, and secondly, *Studies in Clinical Psychiatry* by Lewis Bruce, the latter premature and incomplete perhaps, but pregnant with clinical worth and working hypotheses.

Passing from a mere glimpse of the psychiatric literature of



the time, without even an allusion to the mine of published work in our own Journal, I must now refer to the two great pieces of legislation enacted in recent years which are of almost epoch-making importance. I allude to the Medical Inspection of School Children, and the Mental Deficiency Acts. By the former we arrive at a knowledge of the amount and degree of mental defect in children, and by the latter we deal with it when the facts are ascertained—the one the necessary complement of the other. What could have been more futile and extravagant than to attempt remedial work for these defective children when at the end of school life they became absorbed in the general population, and helped to swell the numbers in our reformatories, prisons, and asylums, and to recruit the ranks of pauperism, prostitution, and crime.

Alas ! that the mammoth labour of the Royal Commission on the Feeble-minded has resulted only in the *ridiculus mus*—the Mental Deficiency Act ; still it is a beginning, and a step in the right direction. I think the advantages to the community likely to be derived from this measure, or similar future legislation, as applied to adults, are over-estimated ; on the other hand, the Act, even as it stands, in its application to children will be eventually of immense benefit to the race. As medical adviser to the Mental Deficiency Committee of this county, the tenor of my advice, speaking generally, is to concentrate all effort on the children, to carry out the spirit as well as the letter of the Act—segregate, train, educate, even cure if possible, but as for the adults, do no more than the Act compels.

I think I have dwelt long enough on the many advances psychiatry has made during the past quarter of the centennium under review, enough, in any case, to demonstrate that psychiatry and our Association are not stagnant or somnolent, but very much alive. We have, as an Association, established the machinery for the creation of more highly skilled medical officers and nurses for the insane ; we are encouraging and facilitating clinical and research work as regards the difficult problem of the prevention, causation, and treatment of insanity, and perhaps, above all, we have roused the conscience of the country to give us its support legislatively and financially. I began my address by stating that while our day-to-day progress seems discouragingly slow, yet we have not been idle

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becoming that we alienists, who know of the awful condition of the insane poor at that period, should rejoice that one hundred years ago our forefathers commenced the founding of public institutions for the relief of the insane poor which were free from the cruelty and avarice of the speculative exploiter of this, the worst of human afflictions.

The County of Nottingham first took advantage of Wynne's Act of 1808, and founded a public asylum in 1812, but, as you know, the original institution was abandoned in 1902 after an occupation of ninety years, on the completion of the new asylum at Radcliffe-on-Trent, not only because of inherent defects, but on account of its being engulfed by the extensions of a large industrial city.

The asylum which you distinguish by your presence to-day opened two years later, *viz.*, in 1814, and it has remained in full activity and usefulness ever since. Being at some distance from the City, land was available from time to time on which to erect additional accommodation, and the successive enlightened Committees, as the necessity arose, have abolished obsolete administrative offices and machinery, and rebuilt anew, and made additions to suit the requirements of the times.

The actual original wards, as those of you who care to view them will see, although small and old-fashioned, have been rendered homely and comfortable at little expense, chiefly by sun-lighting and improved ventilation, also by adding the necessary offices which architects seem never to have dreamed of years ago. Indeed, they compare favourably with the rather barrack-like modern wards of the more recent extensions, such as those of the male annexe built in 1900, common in the asylums of to-day.

The asylum was originally built for one hundred patients; to-day it contains over a thousand, or ten times more than its original number, being an average annual increase of ten for the past hundred years.

One need not go back to the time of Edward the Confessor, when Norwich, of all cities, occupied a place next to London in population and importance, to understand why Norfolk, now an out-of-the-way county, and Norwich far down in the hierarchy of British cities, was in the van of such undertakings as the building of an institution of this kind, for a hundred years ago Norfolk was a great and wealthy county until

railways and cheap ocean transport, and the repeal of the corn laws, diverted its commerce and exceptional prosperity elsewhere, and rendered the then flourishing seaports of King's Lynn and Wells practically dead or dying cities. In the last thirty years Norwich, now independent of the County in lunacy matters, is rapidly regaining an industrial prominence, but the County can never regain its economic prestige and position of eighty to a hundred years ago.

I have no intention of wearying you by giving a chronological account of all the extensions made to the original buildings. A few short notes on the original asylum and its main developments are all that can be of interest to those not closely associated with it, as I have been for the past twenty-seven years.

Shortly after the passing of Wynne's Act, Norfolk Quarter Sessions decided to build an asylum for a hundred patients, this requirement being based on the numbers known to be in gaols, houses of industry and correction, union houses, and some few in private madhouses at Norwich and Loddon, long ago extinct. Competitive designs and plans were invited, and from these a plan was drawn by Mr. Francis Stone, the County Surveyor of that time, the estimated cost of the proposed buildings being £2,300, but which ultimately amounted to £35,000, a variation we are not unaccustomed to even to-day! After viewing various sites throughout the county, choice fell upon a piece of land at Thorpe, two and a half miles from Norwich, belonging to John Harvey, Esq., which consisted of five acres, and was bought for £600. The most recent purchase of land has been effected at the rate of £56 per acre for about seventy acres, showing depreciation of this class of land. Subsequent events have confirmed the wisdom of choosing a site near Norwich, as giving facilities for the easy transport of patients and supplies, by the turnpike roads of those days, and the railways and motor cars of to-day, which connect Norwich with all parts of the county. It is true that nowadays the asylum would have been placed on more rising ground and somewhat further from marshes and river, but the subsoil being chalk the site is more hygienic and generally suitable than would at first appear.

The asylum consisted of a central three-storey block for the officers and administrative purposes, with two-storey wings



extending in a straight line, east and west, for the patients of either sex. Although almost entirely altered internally, much of the old 1814 structure still remains, and was at that time considered a marvel of construction and suitability for its purpose, being visited by all manner of persons interested, and considered a pattern for similar establishments. Yet, to judge from plans, minutes, and journals of that day, which I submit to your notice, it must have been a gloomy and forbidding place, difficult to visualise in its present altered condition.

Around the whole building there was a wall 12 to 15 feet high; the windows, so essential for light and air, were about a fourth of their present number, and all iron-barred and grided, with but few of them glazed; the single rooms called cells were almost dark, and were paved with stone, with a drain gully in the middle of the floor; there were at first no dormitories, and the passages and day-rooms were lighted at night by lanterns burning fish oil. The little furniture provided was heavy, and fixed to the floor; the bedding consisted of sacks of straw laid on ponderous wooden bedsteads; the predecessors of the present ordinary cutlery and glass were wooden or bone implements, and tin mugs and platters, and the fire-places were guarded, of course, by huge iron, cage-like structures. Restraint by mechanical appliances, such as iron ringbolts and chains, cage-beds, strait jackets, leather mittens, and ponderous iron belts with handcuffs attached, were in frequent use, and even corporal punishment and semi-starvation were recognised methods to coerce those in whom disease had destroyed the power of self-control, and who were turbulent and excited in consequence.

In the Master's journal there is ample corroboration of all this. Frequent allusion is made to one John Macro, among many others, who, for tearing, or, as the Norfolker, who prefers the Norman to the Saxon word, puts it, "rending" his bedding, was leg-locked in a special chair kept for the purpose in the yard for days at a time. One startling entry by this Master, who, by the way, could hardly read or write, runs "Sally Smith rent her gown, gave her the side of the head"; the fact of his reporting this to the Committee shows that his act was frequent and permissible; he also seems frequently to have put this same Sally Smith to bed himself, aided by a female servant, one of two on the staff, for some fifty women patients.

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men, and in about the year 1850, there being no more land available south of the Yarmouth turnpike, some was acquired to the north. Shortly after this date, the first great re-construction and re-arrangement of the asylum buildings took place and was completed in 1856, or forty-two years after its opening.

The introduction of the steam-engine led to water-pumping engines and laundry machinery, all of which work had hitherto been done by manual labour. Soon a new laundry, towers for water storage in case of fire, new workshops, and additional blocks of wards were built, and the cost and extensiveness of the works must have borne a close resemblance to those of the reconstruction and additions some fifty years later, in 1902. The erection of the water-towers, workshops, and laundry in a northerly direction necessitated the diversion of the Yarmouth main road seventy yards in a northerly direction, parallel to the old one, which passed thirty yards from the front of the asylum. I have been told on good authority that in the advertisements of the coaching days between London and Great Yarmouth, in the *Norfolk Chronicle*, the fact that the coach would stop for a time at the lunatic asylum, where the lunatics could be seen, was held out as an attraction to passengers, reminding one of the bad old days when the "lunatics" at Bethlem were also on view! The cutting formed for the new road must have been a great work, the excavated earth forming the fortification-like mounds seen to-day in front of the main asylum. The chapel and recreation, or dining, hall were built in 1862.

No further additions of any magnitude were made till 1880, when the Committee, finding further additions to the existing buildings impossible, decided to build an annexe or auxiliary asylum on land to the north of the main asylum, about 500 yards away. They further decided that this annexe should be a building of plain, simple, and comparatively cheap construction, to house quiet and tractable chronic cases—a sort of half-way between the asylum and workhouse—to contain 280 beds, 140 of each sex. It was built after the style of the Metropolitan Asylums Board's asylums at Leavesden and Caterham, and was opened in 1880, having cost £35,000, the same sum as the main asylum cost originally, and for nearly three times the number of patients.

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soften all the cold water used domestically in the asylum, but this is not necessary so long as the boilers, laundry, and hot water are thus treated.

Finally, in the long list of alterations undertaken by my enlightened and progressive Committee, new stores and offices, a new entertainment hall, and a new board-room were built in 1911, and I think the stores, too, are worthy of a visit from those interested in administration, and if further proof is necessary that we are not stagnating, bricks and mortar are actually now being laid to add to our kitchen amenities, and other minor additions.

Ladies and gentlemen, in concluding my review of the history of the insane during the past century, together with an account of this hundred-year-old asylum, I desire to thank you for your patient hearing, and claim your forgiveness for, I am afraid, many omissions. Throughout, my difficulty has not been material, but the limited time available in which to address you.

*The Wet Pack in the Treatment of Insomnia and Mental Disorders.* By H. RAYNER, M.D.Aberd.

THE wet pack was first systematically used by Lucas, an English physician, in 1850. His description of its use is on record prior to that of Preisnitz, the German hydrotherapist, to whom the credit attaching to its introduction has been generally ascribed.

The wet pack has continued to be used extensively in hydrotherapeutic institutions, and counts as one of the most important and successful means of treatment. It has, however, not received much attention in general hospitals, and is comparatively rarely used therein.

In English asylums it was introduced by Dr. Boyd and Lockwood Robertson as early as 1860, but for many years past it has practically ceased to be used in these institutions.

*Process of Packing.*

The process of wet packing is generally described in most handbooks on nursing, so that a repetition of the ordinary technique is unnecessary ; but although the general outline of

packing is given, this is unaccompanied, as a rule, by any of the warnings that are necessary to avoid marring the effects, neglect of which may make its use harmful rather than beneficial. These precautions may be better dealt with after a review of the physiological action of the wet pack.

*Physiological Action, etc.*

Schuller experimentally used the wet pack in trephined rabbits. The principal observations that he records are that the temperature of the body sank one or two degrees at first but began to rise after two and a quarter hours, that the respiration became more slow and deep, and the pulse less frequent.

He also observed that the brain sank more and more, its movements becoming slower and more equable. The vessels of the pia mater after a primary dilation again contracted, whilst the dura-mater became raised by an accumulation under it of cerebro-spinal fluid. These conditions lasted several hours, passing away on the cessation of the pack.

The first effect of the application of cold in the wet pack is a reflex excitation of the cardiac and respiratory centres, accompanied by contraction of the cutaneous vessels. This latter result necessarily drains a large amount of blood into the cerebral and abdominal vascular areas, the stimulation of the nerve centres causing it to circulate with increased pressure and rapidity. Hence the primary dilation of the pial vessels as described by Schuller.

In this first or "cold" stage, M. P. Jacobi suggests that the increased rapidity and pressure of the blood circulating through the nerve centres tends to their depuration of waste or toxic matters.

The shock of the cold in this first stage is commonly accompanied by shivering, and gasping respiration, lasting a variable time. The rapidity with which this is overcome depends on the age and health condition. Rapid reaction is favoured by a previous high temperature, and may be accelerated by a previous hot air bath or dry rubbing, or, in the vigorous, by taking active exercise.

The second stage of reaction is brought about by the excitation of the respiratory, circulatory, and heat regulatory centres,

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resulting in a dilation of the cutaneous vessels, partly by reflex action, and partly from the local demand for heat, as well as by the general increased production of heat from the stimulation of heat-producing changes in the muscles throughout the body. The chilling effect is thus counteracted more or less speedily, and the temperature of the body and of its surface rises, and tends to continue rising unless checked by evaporation.

The skin, as a result of the reaction, becomes so filled with blood, and the heat production is so great, that after some time the sheet will steam on the removal of the covering blankets. This evaporation tends to check the rising temperature, and hence, as soon as this rises to the normal the outer blanket covering should be reduced or removed. In this way, perspiration and elimination are favoured. By neglect of attention to this procedure, by the continuance of the blankets, or the addition of waterproof covering, the temperature may be unduly raised, and the whole effect of the packing defeated.

The elimination of toxic matter through the increased perspiration is one of the most important results of the packing. Max Herts (of Vienna) asserts that the soaked epidermis not only radiates heat more readily than the dry skin, but also permits of greater elimination.

This elimination by the skin is commonly observable in the strong odour of the perspiration, and Zeigelroth (*Deutsch. Med. Zeit.*, 1887) detected toxins in the perspiration induced by the wet pack.

The waste of cuticle is also greatly increased, thereby favouring the elimination of some of the most insoluble excretory products of the body.

Toxic matters, in addition to elimination by the skin, are also more largely oxydised, being converted into more soluble, and consequently more easily excreted products, owing to the increased activity of the circulation, and to the greater heat production, resulting from the wet pack.

Bouchard's observation, that men afflicted with offensive sweat secretions lost them during febrile conditions, favours this view. He attributed the curative effect of fevers in many chronic states of toxic origin to this increased activity of metabolism.

That the wet pack acts in a similar way by increasing the

cellular combustion throughout the body, is rendered probable by the more active urinary secretion, and the promotion of the bowel action.

The derivation, in the second stage, of so large an amount of blood to the skin area, and the soothing influence of the pack on such an extensive peripheral nerve area, favour the production of sleep, many persons falling asleep whilst still in the pack, or so immediately subsequent to removal from it, that there can be no doubt that this is one of its most constant and important physiological results.

The beneficial effect of the pack, and of the sleep induced by it, are so well known that they need no repetition. In febrile states they are evidenced by reduction of temperature, and increased tone of circulation; by relief of symptoms in toxic conditions, and by general improvement in sleepless, exhausted, or excited nervous states.

The general improvement in nutrition is widely contrasted with the disorders and defects thereof, following the use of narcotics.

This general improvement has been very strikingly demonstrated by Maggiora (Venay, and Maggiora, *Blätter f. Klin. Ther.*) in the results on the muscular system, who showed that the lifting capacity was considerably increased after a wet pack. When a cold dip followed the pack the lifting capacity was fully doubled.

Baruch, therefore, advises that the "tone" of the cutaneous vessels should be restored after the pack by a half-bath, a sheet-bath, a cold ablution, or the circular bath and douche of 70° to 80° F.

Light massage, especially *effleurage*, is of special service for this end.

When the pack is given at bedtime to induce sleep, these tonic procedures should be deferred until the morning.

#### *The Technique of Wet Packing.*

The method of application of the wet sheet is to be found in every book on nursing, but there are certain details that require especial attention.

The speed with which the wet sheet and wrappings are applied is a very important point, greatly affecting the quickness and thoroughness of reaction.





The complete exclusion of air beneath the blanket cover, Baruch asserts, is of the utmost importance—on this, he says, “everything depends.”

The application of warmth (by hot water bottles, etc.), to the feet, especially during the cold stage, is also often of great importance; and equally important is the application of cold to the head by clothes, etc., in the stage of reaction.

The temperature of the water out of which the sheet is wrung should be carefully regulated by the medical attendant to the reactive capacity of the patient.

The medical attendant should himself observe, in the first packing, the circulatory effects, and be prepared to administer a stimulant in case of any extreme depression.

The duration of the pack has also to be carefully judged in relation to the object to be obtained, and to the vigour of the patient.

The extent of the packing must be regulated on similar conditions. The whole pack, including arms, neck, and feet, may be reduced to the body pack (leaving out arms and legs), the abdominal pack, or even to the packing of both or one leg, which may be sufficient to induce sleep in some cases.

The thermometer may be used with advantage to guide the amount of the blanket covering. The normal skin temperature is the guide in this procedure. Flushing or copious perspiration of the head and face indicates a need of cold to the head and lessened blanketing, while coldness of the feet points to the need for increased covering, etc.

The ill-effects of covering the blankets with a water-proof material has been already dwelt on.

#### *Therapeutic Use.*

The use of the wet pack is obviously contra-indicated in cases in which the increased pressure of blood in the brain and viscera is likely to be detrimental, as in cases of vascular degeneration, etc.

In cases of feeble circulation it is contra-indicated, owing to the great derivation of blood to the skin. Hence, in organic heart disease, or even in functional weakness, it should be used only in a limited measure, and with great caution.

Ringer, in Tuke's *Dictionary of Medicine*, says that packing

is contra-indicated in the mania of general paralysis and epilepsy, and in acute primary dementia (anergic stupor). Other authors have barred its use in neurasthenia, hysteria, and allied states.

My personal observation is that it may be employed with advantage in many neurasthenic and hysteric cases, but only by using it to a limited extent. In some cases of neurasthenia the packing of one leg may be quite sufficient.

#### *General Experience.*

The wet pack since the days of Preisnitz has continued a most important aid in treatment in all hydro-therapeutical establishments: and the testimony of its usefulness in the treatment of many forms of disease is so well known that it need not be emphasised.

With regard to its use in mental disorder the experience of a few capable observers may be quoted.

Dr. Boyd in 1862 at the Somerset Asylum reported "that the wet sheet packing has proved of great utility in producing sleep" where opiates had failed.

In several instances the relief was immediate, in which excitement, restlessness and want of sleep had continued for several days resisting all narcotics. The patients fell asleep in the pack, becoming more manageable, and more disposed to sleep afterwards.

Dr. Lockhart Robertson (*Journ. Ment. Sci.*, vol. vii, p. 261) writes of the wet pack as "a therapeutic agent in the treatment of mental disease, readily applied to the most resisting, capable of soothing and calming the most violent, and yet so safe in its use that, in experience extending over eighteen months, I have not seen one instance in which I regretted its employment."

He considered it calmative rather than eliminative, although it is noticeable that of the seven cases of active mania which he records, two were suffering from suppression of the menses, one from climacteric and drink, and one after large use of narcotics—cases in which markedly toxic conditions presumably existed.

He observed that while the sleeplessness of recent mania persists, in spite of poisonous doses of the most powerful



narcotics, he, like Dr. Boyd, often found maniacal patients fall asleep in the wet pack.

Dr. Robertson evidently used the pack very persistently, since he remarks that after several weeks' treatment an eruption of boils sometimes occurred, followed by amendment.

Dr. Foster, in the report of the Washington (D. C.) Hospital for the Insane in 1896, writes that two years of almost constant use of the cold pack has demonstrated its value in many forms of cerebral disorder. He found it useful in cases of paresis, in acute maniacal attacks, and melancholia.

#### *Scope of Use in Asylums.*

From recorded observations, and from personal experience, the following classes of cases would appear to be most favourable for its therapeutic employment in asylums :

(1) In acute delirious mania, of sthenic type, with continued insomnia. It constantly succeeds in producing sleep when narcotics have failed utterly ; also in mania of sthenic and active type.

(2) In insomnia accompanying mental disorder, with associated toxic conditions, whether of melancholic or of maniacal type.

Climacteric and gouty conditions, alcoholic and drug habit cases are specially benefited.

A mode of treatment which is certainly of great service in the treatment of some forms of mental disorder, of insomnia, and of many bodily disorders which are found in the insane as well as in the sane, would seem to be especially advantageous for institutions for the insane. It is therefore all the more remarkable that these institutions, so far as can be learned from their reports, very rarely employ this mode of treatment. So little is it used that a physician attached for some years to one of the largest and most up-to-date asylums assured me that he had never seen it employed.

This vanished employment of wet packing in asylums is almost certainly due to its being classed as a form of restraint. The regulation of 1872 enforcing the record of wet packing was certainly not intended to produce this result, but only to check its abuse as a method of veiled mechanical restraint.

The Lunacy Commission has been always most punctilious

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- (1) All male epileptics resident in the asylum, 66 cases.
- (2) Chronic irrecoverable cases resident in the asylum, 150 cases.
- (3) Consecutive male admissions to the asylum, 284 cases.
- (4) All suspected cases of general paralysis.

#### DESCRIPTION OF METHOD EMPLOYED.

About 5 c.c. of blood was obtained by puncture of a prominent vein in the arm, generally the median basilic. The serum was separated by centrifugalisation, and inactivated by heating at 55° C. for thirty minutes.

The technique adopted for the performance of the test was that devised by Candler and Mann (*Archives of Neurology and Psychiatry*, vol. vi).

At the commencement of the research an alcoholic extract of the liver of a syphilitic fœtus was used as antigen, but later the use of the heart extract-cholesterol antigen was adopted; from a considerable experience of this reagent the above authors confirm the statement of McIntosh and Fildes: that this may be regarded as a reliable and standard antigen. The hæmolysin used has been obtained by the injection of sheep cells into the rabbit, and fresh guinea-pig serum has been used throughout for complement.

#### (1) *Estimation of the Minimum Hæmolytic Dose.*

A series of tubes is prepared containing 0.5 c.c. of a 5 per cent. suspension of washed blood-corpuscles, and 0.4 c.c. of a 1 in 10 saline dilution of fresh guinea-pig serum, and falling doses of the appropriate hæmolysin; each tube is filled with saline to a 3 c.c. volume. The tubes are incubated for one hour, when the minimum amount of hæmolysin giving *complete hæmolysis* is noted; this quantity is the *minimum hæmolytic dose*. A suspension of sensitised cells is now prepared, each cubic centimetre containing 0.5 c.c. of the 5 per cent. suspension of washed blood-corpuscles, an amount of hæmolysin equivalent to four times the *minimum hæmolytic dose*, and saline to 1 c.c.

#### (2) *Estimation of the Minimum Complementary Dose.*

Into a number of tubes are introduced 1 c.c. sensitised cells and falling doses of guinea-pig serum diluted 1 in 20 with

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tary doses of complement, and when any quantity of fluid gives total prevention of hæmolysis, four units of complement have been absorbed. For example: If a tube containing 0.1 c.c. of cerebro-spinal fluid or serum shows complete prevention of hæmolysis, the reaction is recorded + 40, and similarly for tubes containing other fractions of a cubic centimetre of cerebro-spinal fluid or serum.

#### INVESTIGATION OF THE BLOOD-SERUM IN EPILEPSY.

The results obtained by the application of the Wassermann test to the serum of idiots and feeble-minded have formed the subject of many publications, but few have dealt with epilepsy. Dean (*Proceedings of the Royal Society of Medicine*, 1910, iii, p. 117) examined the serum of 330 inmates of an asylum for idiots at Potsdam, and obtained a positive reaction in 51 cases (15.4 *per cent.*): the 1 epileptic included in this series gave a positive reaction. The results obtained by Dean show that as the age period rises, so the percentage of positive results diminishes, for, whereas he obtained 21.27 *per cent.* positive reactions on patients ten years of age and under, this figure dropped until for cases sixteen to twenty years of age only 6 *per cent.* positive reactions were obtained.

In Denmark, Thomsen, Boas, Hjort, and Leschly (*Berlin klin. Woch.*, 1911, p. 891) examined the blood of 2,061 feeble-minded persons, of whom only 31 (1.5 *per cent.*) gave a positive Wassermann reaction; the series included 25 cases of epilepsy of ages from five to seventy years, and only 1 gave a positive Wassermann reaction. On the other hand, Fraser and Watson (*Journal of Mental Science*, October, 1913), from an examination of 205 cases of mental deficiency, conclude "that syphilis is the causative factor in a very considerable percentage of cases of mental deficiency of whatever degree of severity, as it is present in over 50 *per cent.*," also that "syphilis is the main causative factor in the production of that type of epilepsy which manifests itself at early ages. Syphilis is present in an equal degree in those cases in which the epilepsy is associated with mental deficiency, and in cases where no apparent mental defect exists."

Rees Thomas (*Report of the Commissioners of Lunacy*, 1912, p. 110) examined the blood of 91 males and 72 females con-

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The following are the details of the non-paralytic cases in which a positive reaction was obtained on the serum, and which were submitted to treatment :

H—. Fits since the age of eighteen. Teetotal. No family history of insanity, tuberculosis, or alcohol.

January 6th, 1905 : On admission, æt. 25 ; pupils unequal ; knee-jerks normal. *Mentally*, dull and confused.

April 6th : Developed rash on arms, legs, and back. Nothing typical.

May 9th : Pustular eruption.

August 11th : Skin well.

August 22nd, 1912 : Serum + 13.

September 11th : Mercurial inunction commenced.

March 25th, 1913 : Lumbar puncture. Cerebro-spinal fluid : Wassermann negative, no lymphocytosis.

July 8th : Mercurial inunction ceased.

July 29th : Serum negative.

August 27th : Serum negative.

June 9th, 1914 : Serum negative.

There is no change in the patient's mental or physical condition.

O—. Admitted November 26th, 1911. Æt. 52. Married. He had blow over right eye with hammer sixteen years ago, and fits began six months later. Alcoholic. *Mentally*, ill-tempered, querulous, dull memory poor. Syphilis denied. Scar in groin.

November 7th, 1912 : Serum + 40.

November 9th : Mercurial inunction begun.

April 8th, 1913 : Mercurial inunction stopped.

April 22nd : Lumbar puncture. Cerebro-spinal fluid : Wassermann negative, no cells.

April 22nd : Serum + 8.

August 27th : Serum + 40.

Fits continue, but his general physical and mental condition has improved. It will be observed that the intensity of the reaction diminished with treatment, but since inunctions have been stopped it has gone back to the original intensity, indicating the desirability of further treatment.

D—. Admitted January 3rd, 1911. Æt. 31. Fits began when æt. 16. Married, one healthy child.

August 22nd, 1912 : Serum + 20.

November 9th : Mercurial inunction begun.

April 8th, 1913 : Lumbar puncture, Wassermann negative, no cells.

April 8th : Mercurial inunction stopped.

April 16th : Lumbar puncture, Wassermann negative, no cells.

July 29th : Serum negative.

August 27th : Serum negative.

June 9th, 1914 : Serum negative.

In the above case the positive Wassermann reaction on the serum disappeared as the result of treatment, but there is no alteration in the physical and mental condition of the patient.

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children still-born, miscarriages, and children dying in early infancy. There is no family history of insanity, and the father denies syphilis.

The diagnosis of juvenile general paralysis was thus confirmed, and is in accordance with his present mental and physical condition.

The patient has since died; the autopsy revealed the typical lesions of general paralysis.

H—. This case was admitted first to the asylum February 25th, 1904, æt. 43; he was acutely melancholic, having made several attempts at suicide, and an alcoholic. He recovered, and was discharged six years later. He was re-admitted three years later, January 24th, 1913, with melancholia. At this time, and previously, there was no suggestion of general paralysis. He denied syphilis, and there were no external signs. Within a few months, however, he had a seizure. The Wassermann test then made was markedly positive on both serum and cerebro-spinal fluid, with lymphocytosis. Since this the diagnosis of general paralysis has been confirmed by the patient's typical physical and mental symptoms. Patient now admits having a "sore" shortly after intercourse, when aged fifteen.

The patient has since died; the autopsy revealed the typical lesions of general paralysis.

A number of other cases for many years have been regarded as chronic general paralytics, but the serum and cerebro-spinal fluid gave a negative Wassermann reaction, and some have been discharged from the asylum, and to the best of our knowledge have remained normal.

In all these cases, there was a marked history of excessive and chronic alcoholism, and they must be considered as cases of alcoholic insanity, or Korsakow's syndrome, simulating general paralysis. The following case is an example:

B—, admitted January 30th, 1909, æt. 34. He served in the army nine years at home and abroad. Last few years has been a carman.

*Family history.*—Father was always a very heavy drinker. Mother insane, æt. 25, under asylum care prior to birth of patient. Three brothers and two sisters are alive and well. Patient had been married five years before admission; no children, no miscarriages. Up to time of marriage he had always drunk heavily, and had lived a loose life, but denies syphilis, although admitting frequent risk of infection; he admits gonorrhœa.

*On admission.*—Incoherent and unintelligible at times; memory very defective; grandiose ideas. Habits wet and dirty. Speech slurred. Inguinal glands shotty. Gait ataxic. Romberg sign marked. Facial muscles tremulous. Pupils small, react to accommodation, but not to light.

*Since admission.*—He has improved mentally and physically. He has had no seizures, and he never had anti-syphilitic treatment.

March 11th, 1913: Cerebro-spinal fluid: Wassermann negative, no lymphocytosis.

March 4th : Serum negative.

August 27th : Again tested : cerebro-spinal fluid negative, no lymphocytosis. Serum negative.

November 13th, 1913 : Again tested : serum negative.

April 21st, 1914 : Again tested : cerebro-spinal fluid negative, no lymphocytosis. Serum negative.

June 30th, 1913.—He has considerably improved, his condition being as follows : Pupils small ; right slightly larger than left ; both react sluggishly to light and to accommodation. Knee-jerks normal. Romberg sign absent. Reflexes normal. Gait normal. Speech is not good, many words being clipped, but this may be partly accounted for by the absence of teeth. He is grandiose only as to his muscular development. He is clean in his habits and occupies himself usefully. Mentally, he is decidedly childish, and is easily provoked.

June 30th, 1914.—The patient has now considerably improved.

I was able to obtain a specimen of blood from the wife of this case, and the Wassermann reaction was negative.

#### THE EXAMINATION OF THE SERUM OF RELATIVES OF GENERAL PARALYTICS.

During the last few months the family history of general paralytics, and other cases giving positive serum reactions, have been closely investigated, and wherever possible the serum of their wives and children has been tested. The importance of this work is shown by the few results so far obtained. In some cases it is of great satisfaction to be able to report a negative serum reaction to the wife, and in others giving positive reactions to be able to advise them to place themselves under treatment.

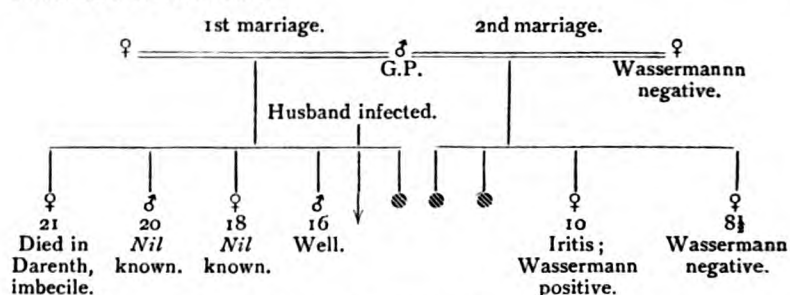
It is to be regretted that such great difficulty attends this work, for often our good intentions are misunderstood, and we are met with a curt refusal on the part of the relatives. We have found, however, that some of the relatives are aware of the fact that they may be infected, and readily assent to the examination of their blood.

Plaut (quoted by Mott, *Archives of Neurology and Psychiatry*, vol. vi, p. 10) investigated the families of 54 general paralytics, and found that 31·6 *per cent.* of the wives gave positive serum reactions ; 37·5 *per cent.* of the husbands of paralytic women were positive, and in only 38 *per cent.* was a transmission of the syphilitic infection to the spouse or offspring not found. The cases with a history of syphilis, and clinical evidence of transmission of syphilis, were remarkably



few. Of the 26 certain, and 8 probable infected children, not one was treated with anti-syphilitic remedies, and in only one was a syphilitic rash diagnosed, and this did not receive any treatment; in all the remainder not one had been thought to be suffering from congenital syphilis.

The few cases I have so far been able to investigate do not enable me to give any statistics regarding the incidence of positive Wassermann reactions amongst the relatives of general paralytics, but my experience bears out Plaut's findings. A number of the spouses have given negative serum reactions, but positive serum reactions have been obtained in many cases in which there were no signs or suspicion of syphilis. The following cases are of interest:



T. A.— Admitted April 18th, 1914. General paralysis. Serum + 40+; lymphocytosis and Nonne Apelt +.

Father insane; suicide. Mother consumptive. A brother and a sister alcoholic. Another sister was seduced, and now a prostitute. The whole family heavy drinkers. Patient married twenty-four years of age, and had four children. He then contracted syphilis, and had mercurial treatment for several months. He infected his wife, who was also treated. She later had a still-born child, and died from septicæmia. The patient married again. His second wife had first two miscarriages, then gave birth to a girl, now æt. 10, who has iritis, and a positive serum reaction; within eighteen months another girl was born, now æt. 8½, whose serum reaction is negative. The serum of the wife now gives a negative Wassermann reaction.

T. H.— General paralysis confirmed *post-mortem*. Admits syphilis contracted fifteen years ago at age of twenty-two. Alcoholism marked. Married six years. Wife infected, and had been under treatment for two years. No children living; three still-born.

W—, æt. 51. Advanced general paralytic. Has an epileptic sister. Contracted syphilis twenty years ago. Married. Wife is infected, her serum giving a markedly positive Wassermann reaction, and is now under treatment. Two children, males, æt. 20 and 18 respectively, said to be well, and to show no signs of infection, but so far I have been unable to test their serum.

I am indebted to my colleague, Dr. E. S. Littlejohn, for permission to quote the following case under his care :

I. D—, female, æt. 23. Admitted October 5th, 1913. Diagnosed as general paralysis on admission. Serum, positive Wassermann reaction; cerebro-spinal fluid, positive Wassermann reaction, positive lymphocytosis, and positive Nonne Apelt reaction.

None of her family show signs of syphilis, but the father, who denies syphilis, gives a markedly positive Wassermann reaction with the serum; the serum of the mother is also markedly positive. They had four children :

Patient, girl, æt. 23. General paralysis.

Girl, æt. 21. Serum, positive Wassermann.

Boy, æt. 19. Serum, negative Wassermann. Tested on two occasions.

Girl, æt. 17. Serum, positive Wassermann.

#### THE INCIDENCE OF SYPHILIS AMONGST THE CHRONIC IRRECOVERABLY INSANE.

With a view to ascertaining the prevalence of syphilis among the chronic cases resident in the asylum, 150 cases, taken at random from male patients of all ages, all of several years residence and considered incurable, were investigated. General paralytics were excluded from the series of cases, and a positive Wassermann reaction was obtained with the serum in twelve instances, *i.e.*, 8 *per cent.* In none of these cases was there a history of syphilis obtained, neither could any evidence of skin lesions be found.

#### THE INCIDENCE OF SYPHILIS AMONGST CONSECUTIVE MALE ADMISSIONS.

Since January 1st, 1913, the Wassermann test has been applied to the serum of consecutive male admissions to Cane Hill Asylum; in only 8 cases was the test not made. Altogether 284 sera were examined, and a positive reaction obtained in 89 instances (31 *per cent.*).

Of the 89 positively reacting cases 61 were general paralytics. Excluding these cases a positive serum reaction was obtained in 28 cases of the 223 non-paralytics examined, 12.5 *per cent.*

Mackenzie (*Fourth Report of Scottish Western Asylums Research Institute*) reports the examination of the blood of 786 insane persons. Of that number 234 were supposed from

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clinical examination to be general paralytics, and of these 221 gave a positive Wassermann reaction. Altogether of the 786 cases examined 347 gave a positive reaction. Excluding general paralytics, he obtained a positive reaction in 126 cases out of 552, a comparatively high percentage of 22.8. A systematic examination of patients admitted to his wards at the Victoria Infirmary showed that 15 *per cent.* gave evidence of syphilis.

All general paralytics in my series of admissions (61 cases) gave a positive Wassermann reaction, and so far in no instance have I found the Wassermann diagnosis to be incorrect.

Of the 28 non-paralytic cases giving positive serum reactions I was able to obtain a history of infection in 8 instances. The remaining 195 cases giving negative serum reactions included 6 cases that gave a definite history of syphilis, the reaction having passed off as the result of treatment, or attenuation of the virus.

#### SUMMARY.

(a) The blood of 66 male adult epileptics has been submitted to the Wassermann test, and a positive reaction obtained in 5 instances, 7.6 *per cent.* This figure agrees with that obtained by other workers investigating similar cases, and the adult feeble-minded. The investigation of adult cases probably does not give a correct estimation of the causal relationship of syphilis and epilepsy, as the examination of juvenile cases probably shows a much greater incidence of positive serum reactions, the reaction passing off as the age advances.

(b) The Wassermann reaction has been found of the utmost value in the diagnosis of general paralysis of the insane. Illustrative cases are quoted.

(c) The investigation of the blood-serum of the relatives of general paralytics so far has shown that a good proportion showing no physical signs of syphilis are nevertheless infected. Illustrative cases are quoted.

(d) The blood-serum of 150 male cases of some years' residence in the asylums, and regarded as incurable, has been investigated, and a positive reaction obtained in 12 instances, *i.e.*, 8 *per cent.*

(e) The blood serum of 284 consecutive male admissions

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either in the brain-tissue obtained from the living general paralytic, or in the brains of those dead of the disease.

The difference between the course of general paralysis and that of other syphilitic lesions of the brain would seem to be due to the different distribution of the organisms in the two cases. In general paralysis, they are found in the peri-neuronic spaces of the cerebral cortex, and actually within the neurones themselves, whereas, in so-called cerebral syphilis, they are confined to the meninges and walls of the blood-vessels.

The terms "parenchymatous" and "interstitial" syphilis of the brain have been suggested, and, perhaps, would better express the difference of the processes in the two diseases.

Coincident with this difference in anatomical distribution are found the certain well-known *clinical* differences, namely, that in general paralysis—

The antecedent symptoms of syphilis are generally very mild.

The onset of the nervous manifestations is much later.

Ordinary treatment has neither prophylactic nor curative influences.

Shortly after the introduction of salvarsan, attempts were made to modify the course of general paralysis by the use of this drug, and the results then obtained were little better than those previously achieved with mercury and potassium iodide. Later, however, some authors have claimed favourable results with neo-salvarsan, especially in early cases, and with intensive treatment.

Since the modification of the characters of the blood is a preliminary measure in most methods of intrathecal treatment, and, in our opinion, is an essential accompaniment of all varieties of such treatment, it seems worth while briefly to review the methods whereby such modification of the blood can be effected.

In the first place, it may be stated that the consensus of opinion is in favour of neo-salvarsan rather than salvarsan itself. It is an open question, so far, whether it is advisable to employ mercurial treatment in addition.

Salvarsan can only be given intravenously in a large bulk of fluid. Neo-salvarsan may be administered intravenously, but, on the other hand, owing to the fact that it can be given in higher concentration, it can also be used intra-muscularly and hypodermically.

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improvement is described in general paralysis ; in cases of tabes the lightning pains disappeared.

As regards laboratory findings, these results are at least as favourable as those obtained by any observer who has employed one of the intrathecal methods.

In general, the recorded results of intensive intravenous treatment are less favourable. While many have produced reduction or abolition of the Wassermann reaction in the blood, and of the cell and globulin content of the cerebro-spinal fluid, few cases are reported in which disappearance of the Wassermann reaction in the cerebro-spinal fluid has occurred.

In respect of the laboratory findings, the experience of the majority of those who have employed one of the intrathecal methods is very similar. It is, therefore, arguable that reduction of the Wassermann reaction in the blood during intrathecal treatment should really be referred to the accompanying course of intravenous treatment, and that the changes in the cerebro-spinal fluid in either case are to be ascribed less to an influence on the specific parenchymatous process of the disease than to one upon associated inflammatory processes in the meninges.

At any rate, Petersen and Stevenson's results suggest that intensive methods of intravenous treatment are worthy of extended trial.

However, the results obtained by earlier attempts at the treatment of general paralysis with salvarsan intravenously, were less favourable than those just quoted. It was then suggested that the refractory nature of the disease might depend upon the anatomical inaccessibility of the spirochete to remedies circulating in the blood-stream. According to the theory commonly accepted, the cerebro-spinal fluid bears the same relation to the neurone as does the lymph to the ordinary tissues of the body, and it is noteworthy that, after the introduction of salvarsan merely into the blood-stream, the presence of arsenic in the cerebro-spinal fluid has never been demonstrated. Attempts, therefore, have been made to reach the organism by the injection into the cerebro-spinal fluid of substances possessing a destructive action on the spirochete.

Naturally, the first such substance to be considered in this connection was salvarsan. The first experiments in this direction appeared to show that the injection of either salvarsan

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to possess a curative effect in secondary syphilis, this effect being out of proportion to its salvarsan content.

The method used by Swift and Ellis, and that adopted by ourselves is briefly as follows :

(1) Intravenous injection of 300 c.c. normal saline, containing 0.4 grm. salvarsan, neutralised with caustic soda ; (2) one hour later, the removal of 40 c.c. blood. This is centrifuged, and 12 c.c. of the serum obtained is diluted with 18 c.c. of normal saline, the mixture being then heated for half an hour at 56° C. ; (3) the intraspinal injection of the 30 c.c. of the diluted serum so prepared, after removal of an equivalent quantity of cerebro-spinal fluid.

The whole process was repeated four times, at intervals of two weeks, between October 28th and December 9th, 1913, and a final repetition was carried out on January 5th, 1914. The Wassermann reaction was quantitatively estimated at Claybury laboratory by Dr. Candler and Mr. Mann, to whom our thanks are due. The method used was that described in the recently published volume of the *Archives of Neurology* (7).

Specimens of blood were taken before and after the intravenous injection of salvarsan on each occasion, and we may here note that there was never any difference in intensity between the two specimens.

The four patients selected for the treatment were very slightly deteriorated, and had already shown some tendency to spontaneous improvement. In one case, which had commenced as melancholia, there was now practically no mental abnormality to be detected. In another, the main symptom was marked amnesia for current events, this condition having originated suddenly fifteen months previously ; the patient, however, had little general blunting. In the two remaining cases, there was a history of hallucinations and disconnected delusions, but at the time of commencing treatment slight emotional dementia was the chief defect.

In all the cases, there were well-marked physical signs such as defective articulation, abnormality of the form and reaction of the pupils, tremors, inco-ordination, and increase in the tendon-jerks. In all the cases, the Wassermann reaction in the blood and cerebro-spinal fluid was strongly positive.

The reaction immediately following the treatment was slight, and diminished in severity with each repetition, the symptoms

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the cell-count and globulin content of the cerebro-spinal fluid; in only one case was the Wassermann reaction in the fluid rendered negative, but in others it was reduced. In three cases, there occurred a complete disappearance of the blood Wassermann, and in one other a diminution.

The findings of other observers are rather conflicting, some have frequently obtained clinical improvement, others but little change of this kind. In regard to the laboratory findings, while many have obtained diminution of the cell-count and globulin content of the cerebro-spinal fluid, and of the Wassermann reaction in the blood, material decrease of the reaction in the cerebro-spinal fluid has been much rarer.

The general experience has been that any improvement in the laboratory findings is of a temporary nature only, and is followed by a return to the conditions existing before the commencement of the treatment.

Three of our own cases show an interesting contrast to this experience, the treatment having had no immediate effect, even quantitatively, on the laboratory findings, but having been followed, after an interval of five months, by considerable improvement in this respect.

Various minor modifications of the Swift-Ellis method have been introduced. Some of them consisted of alterations in the preliminary treatment. The values of these we have already discussed.

The interval between the infusion of the drug intravenously and the withdrawal of the blood has been varied in the hands of different workers, but Swift and Ellis have shown that the inhibitory power on the spirochete, *in vitro*, is at its maximum if the blood be withdrawn within an hour or two.

This observation is opposed to the practice of those who delay the withdrawal of the blood for some hours or days after the intravenous injection, a modification which reaches its greatest degree in the method employed by Fisher, who gave repeated intravenous injections, sufficient to abolish the Wassermann reaction of the blood, before obtaining his serum for intraspinal injection.

The observation of Swift and Ellis above referred to, however, supports the contention that the inhibitory influence of the serum depends rather upon the presence of arsenic in some form of combination than on the presence of any true antitoxin,

for it is unlikely that the latter would reach its height within so short a period, and be eliminated within twenty-four hours, by which time they have found that the serum loses all its power.

Though salvarsan itself does not prevent the growth of the spirochete in cultures, yet its addition, together with a protein, has a marked effect in this direction. This fact, with the findings of Swift and Ellis, underlies the modification wherein the serum is activated by the addition of neo-salvarsan *in vitro*.

A more far-reaching modification, which has recently been employed, is the introduction of the therapeutic substances intra-cranially. They have been injected into the subdural space, beneath the cerebral arachnoid, and into the lateral ventricle.

Injection into the cranial subdural space has been carried out by Levaditti, Marie, and Martel (11) in two cases, and by Krohn (12) in six cases.

The former authors, employing the serum of rabbits previously treated with salvarsan, claimed immediate and striking improvement.

Sicard and Lepointe (13), and also Marinesco and Minea (14), have practised injection beneath the arachnoid of the hemispheres through a small hole drilled in the frontal region of the skull. Marinesco and Minea treated nineteen general paralytics with serum containing neo-salvarsan, added *in vitro*; in three cases, fits followed, in one a monoplegia; four of their cases showed some mental improvement, but none showed any change in the physical signs, or in the laboratory findings.

Beriel (15) has injected into the basal cistern with a needle, through the sphenoidal fissure. In the case of two advanced general paralytics treated thus, the symptoms were somewhat aggravated.

Intra-ventricular injection has been practised by Foerster, and also by Ballance (16). Foerster has treated several general paralytics with salvarsanised serum, obtained much as in the Swift Ellis method, without accident, and in some cases the treatment has been followed by temporary improvement, but the final results have been negative. Ballance has used salvarsanised serum, with or without addition of arsenic, *in vitro*; apart from mental improvement in one case little change seems to have followed.

The advantage claimed for intra-cranial administration is



greater assurance that the therapeutic substances shall reach the cerebral cortex. In support of this it is stated that little interchange occurs between the cerebro-spinal fluid of the regions above and below the tentorium. As illustrating this are adduced Goldmann's (17) experiments, in which little staining of the hemispheres was found when trypan blue was injected intraspinaly. Golla found there was little deposit on the surface of the hemispheres shortly after the injection intraspinaly of colloidal carbon, but marked blackening of the hemispheres after some days.

However, it has been shown by Swift and Ellis (18) that, if phthalein be introduced by lumbar puncture into the spinal sub-arachnoid space, and two hours later fluid is withdrawn simultaneously from the ventricles, and through the lumbar puncture, phthalein is to be found in both, though the spinal fluid contains double the proportion found in the ventricular. Further, it was noted by Loomis that, after Argyrol was introduced into the spinal subarachnoid space, it was to be found at autopsy distributed over the cerebral cortex.

Most relevant of all is the finding of Cotton (19), who, in two cases of general paralysis which died during the course of treatment by the intraspinal method, found salvarsan in the ventricular fluid.

Golla's experiments point to the conclusion that, given sufficient time, substances in the spinal portion of the cerebro-spinal fluid, are diffused over the cortex; and it would appear that therapeutic substances introduced by lumbar puncture cannot be removed without passing over the cerebral cortex, for the main channel of absorption from the sub-arachnoid space is by the Pacchionian bodies into the longitudinal sinus.

Passing to criticism of the individual intra-cranial methods which have been employed, that in which serum is introduced into the subdural space would appear to have no rational basis whatever, for there is no anatomical communication between subdural and sub-arachnoid spaces, nor is there any evidence that absorption occurs from the former to the latter. Purely subdural hæmorrhage does not lead to staining of the cerebro-spinal fluid.

With regard to that in which serum is introduced beneath the cerebral arachnoid covering the hemispheres it may be noted that diffusion beneath the membrane is slow and difficult. It

is therefore probable that, when sub-arachnoid injection through a drill-hole is practised, a large part of the fluid is injected into the subdural space.

Beriel's method of injection through the orbit into the cisterns basalis would seem unduly dangerous.

In connection with the method in which serum is introduced into the ventricles, it may be said that it requires demonstration that it offers sufficiently material advantages over simpler measures, though it cannot be regarded as unjustifiably dangerous in the hands of a competent surgeon, and in the treatment of a fatal disease such as general paralysis. Theoretically, it is hard to see how it possesses such advantages, for the fluid introduced into the ventricles can only bathe the cortex after escaping by the foramen of Majendie into the sub-arachnoid space below the tentorium, and must then have to overcome what is regarded as the main difficulty, namely, diffusion from the sub-tentorial region over the surface of the hemispheres.

In conclusion, we desire to discuss very shortly the supposition underlying all the intrathecal methods of treatment, namely, that the refractory nature of the disease depends upon the fact that the situation of the organisms renders them inaccessible to substances circulating in the blood-stream, but capable of destruction by similar substances in the cerebro-spinal fluid.

In the first place, it is clear that general paralysis is more than an infection of the parenchyma of the central nervous system. The following facts lead to this conclusion. The spirochæte has been recovered from the blood in general paralysis. The production of the Wassermann reaction which is found in the cerebro-spinal fluid certainly occurs in the cortex, but that found in the blood must have an independent origin, for they are not at all proportional. In some cases, the blood is negative while the cerebro-spinal fluid is positive; rarely the blood has been found positive where the cerebro-spinal fluid was negative.

Further, intensive intravenous injection not uncommonly renders the serum negative, without affecting the reaction in the cerebro-spinal fluid.

Hence the necessity for general systemic treatment as a part of, or in addition to, any method of intrathecal treatment which may be employed. Methods in which the systemic treatment

is omitted must obviously fail, for the reason that a large factor of the disease is left untouched.

Secondly, in respect to the central nervous system itself, while the essential change is a parenchymatous degeneration, it would appear that accompanying meningeal changes contribute, at any rate, to the alteration in the cerebro-spinal fluid.

As we have previously noted, the alterations in this fluid obtained by intensive intravenous treatment are generally as striking as those following intrathecal treatment, and this may be due to the fact that in either case the effect is produced by an alleviation of the associated meningitis.

Turnbull and Fildes, in a paper by Mackintosh and the latter (20), have propounded views of the connections of the sub-arachnoid space and the nature of the cerebro-spinal fluid which entirely differ from those commonly accepted. According to them, the sub-arachnoid space is a closed one, lined by continuous endothelium, and has no connection with the lymphatic system of the brain. The cerebro-spinal fluid is not the lymph of the brain, but merely a "passive water cushion." When it contains the Wassermann body it is because the endothelium, which normally shuts it off from the lymphatics and cells of the central nervous system, is damaged by meningitis, permitting contamination from a syphilitic focus.

With an intact membrane, the Wassermann body could not reach the fluid. In general paralysis, the Wassermann body is derived from cells affected by the spirochete; it passes from the affected cell *via* the perivascular lymphatics to the pia, and only contaminates the cerebro-spinal fluid because inflammation of the pia renders the endothelium of the sub-arachnoid space permeable.

They suggest that the Wassermann reaction of the cerebro-spinal fluid cannot be abolished because the spirochetes affecting the brain cannot be reached *via* the blood stream. But if the endothelium were restored to its impermeable condition, the Wassermann body might cease to contaminate the cerebro-spinal fluid. This we suggest is what may happen in the relatively rare cases when either intravenous or intrathecal treatment abolishes the Wassermann reaction of the cerebro-spinal fluid.

This view of the nature of the sub-arachnoid space also

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probable that the latent form had such an effect, yet, as pointing to an opposite conclusion, must be noted a case of Eichelberg and Pfortner, in which a negative Wassermann reaction in the blood existed eighteen months before the development of general paralysis.

Besides the theory which ascribes the resistance of the disease to the situation of the organism, two alternative hypotheses have been suggested. According to one, the spirochete causing general paralysis is of a particular strain, possibly possessing an immunity to existing methods of anti-syphilitic treatment. In support of this is the fact that a strain showing special characters has more than once been isolated from the nervous system, and the instances in which an undue proportion of those known to have been infected from one common source have developed general paralysis or similar conditions.

The second alternative theory attributes both the origin of the disease and its refractory character to peculiarities in the constitution of the host. As bearing on this may be cited the well-known observation of Mott that the early symptoms of such syphilitics as subsequently develop general paralysis are very slight, and he suggests that latent hereditary syphilis, while rendering the early symptoms mild, may predispose to the later development of general paralysis.

A full discussion of the two alternative theories will be found in Mott's interesting article in the recent *Archives of Neurology and Psychiatry*, from which the foregoing remarks are extracted (21).

Even if the fatal nature of general paralysis be due to an incapacity of the neurone to resist the attack of the spirochete, whether of the ordinary type or a special one, yet the natural course of the disease indicates that this incapacity is not absolute. But if the fundamental idea underlying intrathecal treatment, namely, that it affords a means of bringing remedies into contact with the organism, be fallacious, then this treatment offers no hope of providing the assistance necessary to turn the scale.

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*The Detection of a Dysentery Carrier*<sup>(1)</sup>. By H. S. GETTINGS, L.R.C.P.Lond., D.P.H., Pathologist, West Riding Asylum, Wakefield; and ETHEL WALDRON, M.B., Ch.B.Birm., Dipl. Psych. Med., Assistant Medical Officer, West Riding Asylum, Wakefield.

LAST year a paper was given by one of us on the history of dysentery at Wakefield Asylum since its opening in 1818<sup>(2)</sup>, and it was shown that all the evidence pointed to carriers and chronic cases as being responsible for its presence, persistence, and perpetuation there. After an epidemic period they kept the infection alive, and gave rise to the sporadic cases which always occurred in the inter-epidemic times.

It was argued that they were really the keystone of the problem, and that it was only by their detection and eradication that our asylums could be freed from the scourge of the disease. These conclusions were obtained by deductions from the evidence, for though everything pointed to them, yet a carrier had not actually been detected at the time. That being so, the following case is of interest as bearing on the matter:

LX.

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Last April, owing to circumstances which will be mentioned later, we decided that the stools of a patient, Mary L—, should be examined. The first specimen, received on April 16th, consisted of a pea-soupy motion, with some slime. This was plated on MacConkey's bile salt lactose agar, but the resulting colonies were all lactose-fermenters. A second specimen was obtained on April 18th of the same character as the first. This time, white colonies appeared on the plates, and ten were picked off into lactose peptone water, and incubated for ten days for confirmation. At the end of that time eight had fermented the lactose, and only two were true non-lactose fermenters. These two were then tested, and found to be the *B. dysenteriae*. They fermented glucose and mannite, and were without action on dulcitol, saccharose, and salicin; their action on maltose was variable. Milk became acid. Slight indol was given at the first examination, but, judging from the other dysentery bacilli isolated at Wakefield, this also is a variable character.

The patient was then sent to an isolation ward, and an investigation was made into her history, which proved to be interesting. It appeared that she had suffered from loose stools for over four years without any further symptoms. She was admitted to the asylum from a workhouse on March 3rd, 1910, in a state of mania, with a history of two previous attacks, for which she had been a patient at Menston Asylum. She had also, it may be remarked, been in jail. On admission she was isolated, as scarlet fever had been present at the workhouse, and it was not until April 29th that she was sent to Ward 29. No information is now obtainable as to the state of her bowels before she entered the ward, but the nurses there remember that they were found to be loose when they took her over.

Since then her bowels have never been normal. She has had from two to five stools a day, of a loose, partly-formed character. At times she would have exacerbations, when the motions became looser and more frequent, but blood or slime was never seen, nor was there any rise of temperature, and she would seem in her usual health. Yet in view of the bacteriological finding, we must now realise that the condition was probably dysenteric all the time.

Although it is impossible to be absolutely certain, we are

inclined to think that she has not contracted it at Wakefield, but came in with it, having been infected either in the work-house, in prison, or at Menston Asylum, and most probably at the latter, where her stay was more prolonged than at either of the other two. If this is correct, then it is a case of chickens coming home to roost, for Wakefield is the oldest of the West Riding Asylums, and when the younger ones started existence Wakefield sent them both patients and dysentery.

During the time Mary L— was in Ward 29 there was a succession of sporadic cases of dysentery, but it is difficult to say whether she caused any or not, as by a strange chance, after the ward had been free for three years, two cases occurred a week or two before she entered the ward. Still, it is probable that she was responsible for some of them, when one thinks of the ease of infection, as she is of filthy habits. The following table shows the dysentery history of Ward 29 :

Date.	No of cases.		Deaths.	
1907	.	0	.	0
1908	.	0	.	0
1909	.	0	.	0
1910	.	3	.	1
1911	.	4	.	1
1912	.	1	.	0
1913	.	2	.	1

In June, 1913, she broke her arm, and was sent to Infirmary Ward 32, where she remained till September 5th, when she went back to Ward 29. Ward 32 had had eight cases of dysentery in 1912, and a mild case in June, 1913, but the measures taken for removal of suspicious as well as of definite cases appeared to have stamped it out, and the ward certainly seemed free when Mary L— entered it on June 18th. On July 2nd a case of acute dysentery occurred, which proved fatal five days later. There was then a lull till July 23rd, when it broke out in epidemic form, and before it ceased in August there had been altogether fourteen cases with five deaths. One cannot definitely connect Mary L— with them, but the circumstances are suspicious to say the least.

An exacerbation of her usual looseness in April this year led to renewed attention being drawn to her, and it was decided

that advantage should be taken of the favourable occasion to make a thorough bacteriological examination of her stools.

Her case is an interesting one. Here we have a patient who appears to have had chronic dysentery for four years at least without giving symptoms sufficient for it to be diagnosed. That a dysentery can persist for years is no new fact, and Sydenham<sup>(8)</sup> has a passage on the subject. That a chronic diarrhoea can be dysenteric is also nothing new, though a condition like Mary L—'s of semi-diarrhoea has not so commonly been recorded. Still it comes under the same heading, and the detection of her case emphasises the importance of realising this.

For this condition must be borne in mind, and such patients viewed with suspicion, while, if possible, frequent bacteriological examinations should be made. Even an ordinary close examination may reveal suspicious circumstances, such as slime, etc., which otherwise would be missed.

This patient's case illustrates, moreover, the difficulty which even the bacteriologist has to diagnose the condition. The first search was an entire failure, while on the second occasion, though ten white colonies were selected for examination, only two turned out to be dysentery bacilli, and thus they were nearly missed again. The excretion of the bacilli appears to be very irregular in these cases, and it is a matter of luck whether the bacteriologist happens to get them or not. The typhoid carrier is fairly regular in the excretion of the bacilli, but the dysentery one is inconstant and fickle. Moreover, the dysentery carrier differs considerably from the typhoid. The latter generally appears in normal health, for the *B. typhosus* lives comfortably in the gall-bladder, and pathological lesions do not necessarily result. Whereas in the case of dysentery, so far as our present evidence goes, the bacillus resides in the intestine, where its presence causes chronic inflammation, though the symptoms given may be of the mildest. Thus, though the patient actually is a carrier of the bacilli, the condition really is one of chronic dysentery.

The danger in our asylums is not from the definite "shouting" cases, for they are easily recognised and dealt with, but from these quiet chronic ones which do not bear the ordinary appearance of dysentery, and in consequence so often go unrecognised to the harm of the others, and the perpetuation of the disease.



(<sup>1</sup>) Read at the Annual Meeting, Norwich, July 15th, 1914.—(<sup>2</sup>) Gettings "Dysentery Past and Present," *Journal of Mental Science*, October, 1913.—(<sup>3</sup>) The passage from Sydenham is as follows: "It sometimes happens, though very seldom, that a dysentery ill treated at the beginning afflicts a particular person for several years . . . whilst the patient at the same time continues pretty capable of following his business. I met with an instance of this lately in a woman who was perpetually affected with this disease during the three last years of this constitution." Hippocrates, too, points out how dysentery and diarrhoea merge into one another in an epidemic.

## DISCUSSION,

At the Annual Meeting in Norwich, July 15th, 1914.

The PRESIDENT said that the Association was much indebted to Dr. Gettings and Dr. Waldron for this paper, and one must admire their zeal in prosecuting their investigations, which he hoped would be successful.

Dr. MENZIES desired to impress upon members, at the outset, the necessity of distinguishing between chronic cases of dysentery and actual dysentery carriers. He took it that if they were going to allow the definition of dysentery carrier to spread into the category of chronic dysentery they would get into an hopeless tangle. It was not done in the case of enteric, so why should it be in connection with dysentery? He knew a dozen or sixteen cases at Cheddleton, chronic cases, such as one often found showing little discrete patches of both healed and active lesions *post-mortem*, but he took it that they could not be properly called carriers. The true dysentery carrier was the person who always had normal-looking stools, and showed no symptoms of dysentery either during life or *post-mortem*. He knew one case like that who, seven years ago, gave the agglutination reaction to the *Bacillus dysentericus* (Flexner), and had shown it positive on each of the three occasions that the reaction was taken since. He was an able-bodied man, and had continued working in the garden the whole time; the stools were normal. There had never been any other case in the ward. The chronic dysentery case had loose stools, either always or generally; sometimes a little mucus, and, rarely, blood. These cases were easily isolated. It was the carriers which caused the difficulties. Without expensive bacteriological examinations it was almost impossible to spot them.

In answer to Dr. SERGEANT as to why the case he mentioned had not affected others in the ward, he said one did not yet know how the dysentery infection was carried, nor where the bacillus lived outside the body; indeed its habitat inside the body was not known either, except that it was generally found in the intestine.

Dr. KEAY said members would feel much obliged to Dr. Gettings and Dr. Waldron for this paper. It was of interest to those who came from Scotland, for he had not seen a case of the disease in a Scotch asylum, and he would like to hear of any reason why that was so. Was it another instance of the hardness of the Scot? Of course they in Scotland had not the least desire to emulate other asylums in this respect. Incidentally, this paper served to emphasise the need of every asylum having its laboratory, where clinical observations could be carried on.

Dr. COLLINS asked, in view of what Dr. Menzies said, whether there was any evidence that the dysentery carrier, pure and simple, caused infection, and was responsible for spread of the disease? Was there any reason to suppose that it was not always the chronic dysentery patients who were responsible for its spread? He agreed that the person who showed symptoms of the disease should not be called a carrier, but the dysentery symptoms in a given patient might be very slight, and among a large number of chronic patients these symptoms might be very difficult to detect, however carefully one went to work. If there was no evidence of spread of the disease by the carrier, as distinct from the chronic case, the carrier was a matter of mere interest rather than of importance. In reference to Dr. Keay's remarks as to the incidence of dysentery in asylums in other countries than this, he would like to know whether England was specially blessed in this respect?

Dr. MENZIES, in further remarks, said there was no positive evidence as to spread

by carriers in this disease. In the case of enteric carriers, the *modus operandi* of infection was tolerably well known, and therefore one was bound to presume that the dysentery carrier, although himself free from symptoms, was a source of danger to others. But, after bacteriological examination of every probable case, there always remained a substratum who might be a source of danger, for not only was the infallibility of the agglutination test not yet fully proved, but also clumping took place with normal serum in 1 : 25 concentration.

Dr. GETTINGS replied that he agreed with Dr. Menzies' terminology, but at the same time he regarded a true dysentery carrier—that was a healthy person who excreted the bacilli—as very rare, and it was the other classes, these chronic dysenterics, which were the dangers in asylums. They were the ones which had to be picked out and isolated, but it was not easily done. He had recently examined a considerable number of patients who suffered from loose stools, but Mary L—was the only carrier he had found. The question arose whether one ought to isolate every patient with persistent looseness of stools. It was among these that the danger lay, yet the majority seemed to be innocent. In answer to Dr. Keay's remarks as to the absence of dysentery from Scotland, he could assure him that they had it in that country, though he agreed that it was quite rare there. There was an outbreak at Morningside twelve years ago, and one last year at Woodilee. It seemed to exist in a latent form in Scotland, and to lie low until favouring conditions arose, when it would burst out. Both at Morningside and at Woodilee there was overcrowding at the time. Provided that there was a focus of infection present, such as a carrier, an epidemic would occur among the people around when conditions arose which lowered their vitality. It might be overcrowding, as at Morningside, underfeeding, as in the Millbank Prison outbreak of 1823, or even cold, as was shown at Wakefield during the coal strike in March, 1912, when the heating arrangements were cut down, and an epidemic of dysentery broke out. If a war were to occur even in England or Ireland, dysentery would probably show itself very soon, for the conditions of over-exertion, fatigue, and irregular or bad feeding would render the men susceptible to an infection which under normal conditions would be ignored. With regard to the question of dysentery in Scottish asylums, he suggested that their comparative freedom was possibly due to the fact that their asylums were smaller, and their buildings more scattered, than the English ones, while they also went in more for open-air treatment.

Dr. KEAY, in further remark, said that he had received at his asylum more than 500 cases from Morningside, but no case of dysentery, although they were transferred on account of acute crowding.

*The Use of Scopolamine Hydrobromide or Hyoscine in the Treatment of Mental Disorders.* By A. W.

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London County Asylum, Hanwell, W.

FOR the sake of brevity, I use the term hyoscinism to designate the symptom group which may arise from the administration of scopolamine hydrobromide in repeated doses.

Formerly, I placed considerable confidence in this drug as a sedative, whether exhibited in occasional single doses hypodermically for the alleviation of great excitement, or in regular doses to gradually reduce maniacal symptoms. I have of late, however, lost faith in it for the latter purpose (*i.e.*, in continued

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The earliest symptom, which I have noticed, is an intense, restless excitement, associated with vivid hallucinations; this is soon followed by rapid emaciation, and finally there is a well-marked paresis of various muscles, which doubtless if unrecognised, would not long precede death.

The sensory disturbances are obviously of a very terrifying kind, and the motor restlessness is entirely dependent on them; the patient foams at the mouth, chatters incessantly, and is never still for a moment; when approached by the nurses she fights them, under the impression that they are assisting in the awful events which fill the whole field of her consciousness. The most vivid hallucinations are those of sight, and subordinate to them are those of hearing.

As is only to be expected, the excitement is accompanied by a rapid loss of flesh, the patient becoming a mere shadow of her former self. In one case the withdrawal of the drug was followed by a gain in weight of 2st. 5 lb. in eight months.

The motor nervous symptoms are well marked, and include muscular paresis and tremor, dilated pupils, increased kneejerks, etc.; the staggering gait and ataxic movements recall a person in the early stages of alcoholic intoxication, while the speech is suggestive of general paralysis. The weakness of the legs is very evident, and they will with difficulty support the weight of the body.

I am unable to give any description of the pathology of this condition, because I have not seen a fatal result, but there cannot be any gross lesion, as the symptoms rapidly disappear when the hyoscine is withdrawn.

The indications and contra-indications to the use of scopolamine hydrobromide need careful consideration, and one must differentiate between the two methods of administration, *viz.*, hypodermically or by mouth.

Hypodermically, and in a single dose, the only contra-indication is the physical condition of the patient. One naturally avoids the use of so potent a drug in cases of heart disease, senility, etc.

Its administration in repeated doses hypodermically should be avoided. By mouth in an eight-hourly mixture hyoscine may eventually give rise to alarming symptoms, even when the dosage is small, but not with such certainty or severity as when repeated hypodermic injections are given; as a matter of

experience, even with fairly large doses, such as  $\frac{1}{40}$  gr. given three times daily, I have on only one occasion seen paresis induced, although the other symptoms of hyoscinism, namely, hallucinosis, delirium, and emaciation, have soon been noticeable.

The liability to induce hallucinosis must also be reckoned as a contra-indication to the use of scopolamine hydrobromide as a regular sedative for the insane, because the terrifying nature of the visions contraverts its use as a form of beneficent treatment; patients indeed have not infrequently complained to me in such terms that it left no doubt that they dreaded the injection through fear of its effects.

Another restriction to its use has reference to the patient's mental capacity; imbeciles, for instance, are notoriously intolerant of alcohol, though particularly given to abuse it, and, similarly, with hyoscine one notices that among the more imbecile class of the insane there is a marked intolerance of this drug.

The emaciation induced by this drug when taken in repeated doses should also restrict its use in this way among the insane; among recoverable cases this objection is obvious; among chronic cases the emaciation and general debility associated with hyoscinism must lower the patient's resistance to the tubercle bacillus—and in any asylum population the risk of such an invasion is considerable.

It must be admitted, however, that all sedatives have certain disadvantages, and yet in spite of this they are necessary in the treatment of some cases. I therefore still prescribe hyoscine, but frequently change it for some other sedative.

The treatment of hyoscinism is simple. The withdrawal of the drug leads to a rapid improvement, the delirium abates within ten days, the loss of weight is regained within six months, and the paresis passes off within a few weeks.

For the delirium of hyoscinism perhaps *liq opii sedativus* in half-drachm doses gives the most satisfactory results.

Briefly then one can summarise the important points as follows:

- (1) The continued administration of scopolamine hydrobromide may give rise to characteristic symptoms of chronic poisoning.
- (2) Weak-minded epileptics appear to have a marked idiosyncrasy for the drug.



(3) Careful watch should be kept on all patients taking hyoscine regularly, and undoubtedly the best test for any ill-effects is the weighing-machine.

(4) For acute excitement there is no drug so reliable as hyoscine when given hypodermically, but the doses must not be repeated indefinitely.

(5) Lastly, there is no doubt that life may be endangered by hyoscinism.

#### DISCUSSION,

At the Annual Meeting at Norwich, July 15th, 1914.

Dr. BOWER said members of the Association felt much indebted to Dr. Daniels for having brought this subject forward. The author had pointed out what he, the speaker, had long said—that the ordinary practitioner appeared to invariably dose his maniacal cases with subcutaneous injections of hyoscine. He did not consider that there was a danger of members of the Association using hyoscine too much or unwisely. One remark made by the author was, that, as the patient would not take any medicines by the mouth, there was nothing for it but to give them hypodermically. He, Dr. Bower, however, thought that very frequently one could give rectal injections of chloral, with a very excellent effect. Perhaps he would be voted old-fashioned in using chloral, but he preferred it.

Dr. GILMOUR said he thought it would be agreed that hyoscine was a drug which, on occasion, might be very dangerous to use. Twenty years ago he saw a patient given an injection of  $\frac{1}{100}$ th of a grain of hyoscine and die in twenty minutes. That was immediately after he had graduated, and it made him cautious in using hyoscine at any time; he believed he had not used it more than twice in the last twelve years. But he had used scopolamine with benefit; he gave it in small doses in cases in which there was motor excitement, as in cases of paralysis agitans. By giving  $\frac{1}{100}$ th to  $\frac{1}{300}$ th of a grain three times a day in such cases an extraordinarily good effect was produced; the dose seemed to be too small to cause chronic symptoms, and under this treatment the patient gained in weight. His guide for giving it was the presence of motor excitation, even of a spinal character. In acute cases, especially where there was an elevation of temperature, or mania, he regarded hyoscine as a drug of great danger. He agreed with Dr. Bower that in some 90 per cent. of the cases it was the drug which the practitioner had been using when an acute case was admitted.

The PRESIDENT said the Association was much indebted to Dr. Daniel for bringing this really practical, useful, every-day matter forward. A good deal—perhaps too much—was heard yesterday about mechanical restraint; and there had always been the fear that with the abolition of mechanical restraint its place would be taken by chemical restraint. And he thought there was no drug in the Pharmacopœia—or outside it—which would tend more in the direction of chemical restraint than the use of hyoscine. He endorsed the very valuable suggestion of Dr. Bower. Anyone who had attained to the dignity of consulting work could bear out what Dr. Bower and Dr. Gilmour said, that hyoscine was the favourite weapon of the general practitioner. His own experience of it was limited to a few rare cases in which possibly one would, after due consideration of all the points which Dr. Daniel mentioned, give one injection, and possibly a second one next day.

Dr. EDWARDS desired to criticise one point in the paper, namely, as to the symptoms he related, and which he alluded to as pathognomonic. Surely the symptoms which he narrated were the symptoms of any case of chronic poisoning, whatever the sedative drug employed. For instance, the altered speech suggestive of general paralysis had been seen in sulphonal poisoning. The same might be said of the motor wasting, and the feebleness of the legs, so that they seemed scarcely able to carry the weight of the body. What struck him as being possibly

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preliminary communication desirable. The condition to be considered may be described as "encephalitis," or "encephale myelitis," rather from the want of a better term than from any conviction on our part that it is essentially inflammatory in origin.

A few introductory remarks will, we hope, make clear the manner in which the subject first presented itself to us.

From time to time cases have occurred at the Rainhill Asylum which have been diagnosed as cases of *dementia paralytica*, but at the autopsy the brain did not present any of the characteristic appearances usually associated with this disease. A considerable number of specimens from such cases have now been collected. In a certain proportion of these cerebral softenings were found, in others there was a lesion of the corpus callosum, and in others still, a cerebral tumour was present. All these conditions may, as is well known, give rise to certain symptoms simulating those of *dementia paralytica*. These cases, however, do not concern us at the present time.

It has been the routine practice to examine microscopically, at least to some extent, all the above-mentioned specimens as they were obtained in order to ascertain with greater certainty that the patient had not suffered from *dementia paralytica*, and also to discover, if possible, the reasons for the presumed mistake in diagnosis having been made.

In the series thus examined are three cases which were found to resemble one another very closely, in that, although the brains presented an appearance to the naked eye which was normal or almost so, a curious lesion of the Betz-cells of the cerebral cortex was evident, nearly every Betz-cell examined being profoundly affected. The solitary cells of Meynert in the post-central cortex were also involved, but to a less extent. The other nerve-cells of the central region, as also those of other parts of the cortex examined, were by contrast much less changed, often, indeed, being practically normal.

One of the cases was of several years' duration; the other two were more acute, and although evidence of reactive change in the meninges, the vascular walls, and the neuroglia were not altogether absent, this was not present in anything like the amount that occurs in typical cases of *dementia paralytica*. Unfortunately, in these three cases—as they were not at the time regarded as being of particular interest—the basal

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There is much degeneration of the nerve-cells of these structures. In addition, the vessels are intensely congested, and in one case in particular numerous small hæmorrhages are present with recent neuroglial proliferation.

Clinically, all the five cases referred to showed many features in common. All were women, young or comparatively so, their ages varying from twenty-four to forty-one years at the time of death, and, as regards the pathological appearances found in the different cases, all closely resemble one another in many particulars.

Allusion may be made to another case of particular interest.

On reviewing his clinical experience it occurred to one of us that a patient, a male, æt. 35, who died in the year 1913, had had certain symptoms recalling those present in the above-mentioned cases. Some blocks from the cerebral hemispheres had been preserved, and on cutting and staining them lesions were found of a precisely similar character to those seen in the cases previously examined, and involving especially the Betz-cells. Several other cases are still under observation, some of them occurring in males, in which the symptoms, although not entirely alike in all instances, are still sufficiently so, and so nearly resemble those that characterised the cases which have ended fatally, that the presumption is a very strong one that all are of an essentially similar nature, differing from each other only in acuteness and degree.

The chief symptoms may be described as follows : A constant one is rapidly increasing paresis, varying in severity and extent, but affecting chiefly the lower extremities. In the severe cases, the paresis is of such a widespread character, involving not only the limbs but also the facial and lingual muscles, that a diagnosis of general paralysis is at once suggested, and when, as in some instances in the later stages, muscular twitchings or convulsions occur, the resemblance to the classical picture of general paralysis becomes considerable. But it is noteworthy that, in only one instance, was a diagnosis of general paralysis made on admission. In the other cases, it was not until the patient was struck down by an illness, the most prominent feature of which was widespread paresis, that the possible presence of this disease began to be suspected. In two cases, the onset of paresis was very sudden. In one case, the patient went out with a walking party and was overtaken by such



marked and sudden weakness of the legs that he was unable to get back without assistance. In the other case—and this in one of those that died—the patient suddenly fell down in the airing court, causing an abrasion of the knee, and it was not till then that he was noticed to be weak on his legs. Gastro-intestinal symptoms in the form of abdominal discomfort, vomiting, and ulceration of the buccal mucous membrane have occurred in a large proportion of the cases, and in two the vomiting was of such a nature as to strongly support the diagnosis of cerebral tumour.

In four cases, a dry, eczematous state of the nose, face, and backs of the hands was present, and in one the condition is described as being like sunburn. Some of the cases recovered more or less completely from the paretic and other symptoms, but showed marked mental deterioration. Two of these had subsequent attacks, which ended fatally.

The majority of the cases have been classified as dementia præcox, and the question arises, are we dealing with a condition which produces mental symptoms analogous to dementia præcox, but which may ultimately lead to changes more widespread and destructive in character than those usually seen in such cases? At the same time, it is of interest to note that the lesions of the nervous system, so far as this has been examined in those cases which proved fatal, appears to us to bear some resemblance to those described as occurring in pellagra. Many of the symptoms are also very suggestive of this disease, although, and especially in some of the less recent cases—so far as can be judged from the clinical records—these cannot be said to be altogether pathognomonic, nor does the presence of the disease seem to have been suspected during life, except in one case, and here the clinical picture was so strongly suggestive of cerebral tumour as to overshadow that of pellagra. But, at the time these patients were under observation, little or no attention had been paid to the question of the existence of pellagra in English asylums.

(<sup>1</sup>) The substance of this communication was incorporated in a report sent to the Commissioners in Lunacy on research work carried out during the year 1913 at the Rainhill Asylum, but the report was inadvertently omitted from the Blue Book published by the Commissioners. [By Authors.]



*On Lethargy.* By Prof. K. AGADJANIANZ (Warsaw).

LETHARGIC phenomena have often been studied and described in connection with hysteria and hypnotism. It has been pointed out by hypnotists that a state of lethargy occurs at times which takes its own time to disappear. Lethargic states in hysterical persons, whether under the influence of hypnotism or not, are not rare. According to Charcot's classical descriptions the lethargic state can be produced artificially during hypnosis by closing the eyes in the cataleptic phase, but it can likewise be primarily caused by fixation. During the lethargic state consciousness is obscured, sensitivity to pain is diminished, and the tendon reflexes are increased.

The following analysis concerns two patients who had never before showed any symptoms of neurosis, or any tendency to lethargy. Previous physical health had been good, and in neither case had they been subjected to any form of hypnotism or suggestion. In one case the attack of lethargy was the first symptom of an acute infectious illness. A close observation of some of the disputed symptoms of lethargy, and their analysis, will be found interesting when taken in connection with the origin of the whole phenomenon.

*Observation I.*

The patient, N—, is a girl, æt. 18, who is completing her studies at a high-school in St. Petersburg. Her father died æt. 72, and her mother æt. 59. There are no indications in the family history of mental or nervous disease, of alcoholism, or of tuberculosis. The patient has three brothers and six sisters, all her seniors; nursed by her mother, she passed through a perfectly normal childhood—no convulsions, or other nervous symptoms. The menses commenced at the age of 15, and are regular; her sleep and appetite until the attack were normal.

She was seized with a headache on the morning of January 22nd, 1913, and later in the day, when called to the blackboard during a lesson, fell asleep. Dr. Ordoukhanoff and I saw the patient at about 4 p.m. (four or five hours after the onset of the attack), and after a thorough examination and consideration of the symptoms diagnosed a state of lethargy. The patient remained so for a period of sixteen hours, at the expiration of which she awoke with headache and photophobia, although the latter might be attributed to the inflammation of the conjunctivæ in connection with the onset of measles. In my presence the temperature was 99.2° F.

The patient is of medium height, normally, though somewhat underdeveloped for her age, and is moderately nourished, and of healthy appearance; the lymphatic glands and thyroid show nothing abnormal;

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The patient, a native of the Caucasus, usually lives in St. Petersburg and London; æt. about 40; married; one daughter; father died at 55, mother at 50; her father was 45 and her mother 38 when patient was born; no consanguinity, she had four brothers and three sisters, five of them older; no hereditary diseases, general, mental, or nervous, were observed in the family; the patient's brother committed suicide, but it was on account of blindness caused by lues, which drove him to despair. The patient had a regular childhood; teething at the proper time; her mental and physical development were parallel; had pneumonia years before; she was subject to atony of the intestines, and at times to headache; her vasomotor system was excitable; the menstruation was regular as a rule, only at the beginning of the attacks to be described were there some deviations from normal; her one pregnancy and the delivery passed normally; during the last few years she had passed through periods of emotion and sleepless nights.

The present illness began at the end of the summer, 1912, with headaches and nervous instability; at the same time she suffered from menorrhagia, with subsequent anæmia. The treatment was not successful, and at the end of October a general weakness and dilatation of the right heart, with a systolic murmur at the apex, was noticed, but at the subsequent examination of the patient by Prof. Sirotinine this murmur could not be heard. At times a slight œdema of the legs was observed; hæmoglobin, 62 per cent.; urine normal. She suffered from persistent headache, mental oppression, and sleeplessness until treated by iron, arsenic, bromide, and valerian, and dieting and rest did not improve her general health; menorrhagia began to disappear.

The first attack came on in December, after a passing emotion; she got a severe headache, a pain in the region of the heart, followed by sleep. The pulse was at 68-70, regular, and fairly full; in the beginning the patient answered when spoken to, but did not react to pin-pricks; the temperature of the body was 99.4°-99.6° F. Her first attack lasted several hours; it passed away gradually, while the respiration increased, and slowly became normal. After the attack she had sharp pains in the region of the heart, in the left side of the chest, and in the left arm; morphia did not give her relief. The attack returned in about a fortnight, and was repeated at various intervals, at first in connection with any kind of emotion, and later without any obvious reason, but the character of the attack was always the same; it was preceded by headache, heart-palpitations, and retardation of the respirations.

In the autumn, 1912, I examined the patient for the first time, not during an attack, and found the following:

The patient is of a medium stature, normal development, and satisfactorily nourished; temperature normal; skin somewhat pale; there is slight œdema of the legs; the lymphatic glands cannot be felt, the thyroid gland does not appear to be altered; no physical stigma of degeneracy present; the innervation of the face-muscles and expression are normal; the pupils of the eyes are equal, and react to light and to accommodation; there is no nystagmus, strabismus, or ptosis; sight, taste, hearing, and smell are normal; the tongue when protruded shows slight tremors, and no deviation; voluntary speech is free, no

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a trace of Babinsky's symptom on the left side ; the mechanical stimulation of the facial, radial, and popliteal nerves causes marked contraction of the muscles they innervate, especially on the left side. Tactile stimulation does not cause any contraction of the underlying muscles ; muscular resistance is reduced on passive movements. As regards differential diagnosis : Stokes-Adam's disease was excluded, in default of any disorder of the heart. As for narcolepsy, it is usually sudden in onset and of short duration, and the patient can be roused easily by means of mechanical stimulation. As to the present case, attacks occur at irregular intervals, they last for hours, and are followed by peculiar modifications of consciousness, of the cardiac and respiratory functions, and by attacks of pain.

The patient was treated by simple heart-tonics (convallaria majal, and others), general tonics, and psychotherapy. About the middle of April the patient went abroad improved. In Berlin she had an attack, which was witnessed by Professor Oppenheim, who diagnosed lethargy. In Paris the patient was treated in a sanatorium under the supervision of Professor Babinsky.

We can draw the following conclusions from these two cases :

Both patients had not previously shown any symptoms of neurosis. In the second case during the illness there was an inequality of pain sensibility, and impaired pharyngeal reflexes. Neither had been hypnotised prior to the illness. The thyroid gland in both patients was normal. In one case the lethargy coincided with the onset of measles. In both cases headache preceded the attacks, although in the first case this could be attributed to infectious disease. In both cases amnesia was complete. Towards the end of the attack the first patient showed clearly a reaction to the mechanical stimulation of the mucous membrane of the nose, and the second patient was roused by inhaling ammonia. In neither case were cataleptic symptoms or rigidity noticed. Muscular resistance on passive movements was reduced in both cases. The attacks in the second case recurred periodically, without definite intervals. The attacks in both cases were of rather sudden onset, but the symptoms disappeared gradually. After the attack the second patient had prolonged, sharp pains in the left side of the chest, which could not be relieved by morphia. The blood-vessels of the *fundus oculi* in the first case were contracted during the attack, but in the second case they showed no alteration. The respirations were diminished in both cases, especially in the second. In the second case the pulse slowed down before the attack, but during it there were no marked deviations from normal. During the attack in both patients the tendon-reflexes and the

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been said to them during the lethargy, neither did they respond.

We observed in our second case a retardation of the pulse, and an acceleration of breathing at the beginning of the attack, and *vice versa* during its disappearance. I did not see the beginning of the attack in the first case, and its further course was analogous to the second case in respect of pulse-rate and respirations; the size of the pulse was medium in both cases. Tamburini and Sepilli observed that at the moment of entry into the hypnotic state there was accelerated and irregular breathing, as well as an accelerated pulse-rate with a larger pulse-wave, which was greatly altered by the respiration. Horsley did not find alterations in the curve of the pulse, although the method of fixation frequently used in hypnotism can of itself produce a fluctuation of pulse and respirations, in this sense Bernheim and Preyer do not consider it possible to attribute the change in the pulse and respirations to hypnotism *per se*. Putting aside the question of hypnotism, and of the lethargic stage of hysterical attacks, we may suppose that lethargy by itself in a clearly defined form probably gives fluctuations of pulse and respiration analogous to those during a normal sleep, with which our observations agree, as well as those of Oppenheim and others. The tendency of the pulse and respirations to weaken and to be slowed in lethargy, as distinct from the normal sleep, can reach pathological proportions, *e.g.*, in Pfendler's case, when during forty-eight hours there were no signs of life. But, putting aside extreme cases, we can but acknowledge the similarity of the alteration in cardiac and respiratory activity in lethargy to the alteration of these functions in normal sleep.

The study of the tone of the muscles during suggested or hysterical lethargy gives hardly definite results; in the former, suggestion plays a great part, and in the latter, besides self-suggestion there is a blending of hysterical cramps and contractures with the symptoms of a lethargical period, which may make their differentiation difficult. A certain lessening of the tonus, observed by us in our lethargical cases, where hysteria as well as suggestion could be with great probability excluded, represents most likely the true state of the muscles during lethargy.

There is likewise a difference of opinion on the subject of

the state of the vessels of the *fundus oculi* during lethargy. In our first observation there was a slight contraction of the retinal vessels, in the second the vessels were normal. We may suppose that the vessels of the fundus oculi scarcely present any alterations characteristic of lethargy, and therefore the state of the blood circulation of the brain during lethargy remains an open question. The literature on the subject is full of contradictions. Carpenter explains the phenomena of hypnotism by anæmia of the brain; others, *e.g.*, Moll, do not find any characteristic alterations in the fundus oculi. Heidenhain gave the patient amyl nitrite to inhale, and in spite of the dilatation of the vessels obtained phenomena of hypnotism; Bacchi noticed hyperæmia, which is in direct contradiction to Carpenter's observations. The vessels of the brain can be altered by so many accidental circumstances that we cannot see in their condition the physiological cause of the lethargical syndrome; on this point it is extremely easy to confound accompanying circumstances with the essential basis of the condition.

Finally, let us touch upon the ætiological side of the disease. The main point lies in the question whether lethargical attacks in any way depend upon hysteria, whether lethargical sleep appears as a separate link in the chain of hysterical or hypnotic symptoms, or whether the lethargical syndrome can take place episodically in connection with other causes. We know that hypnotism may call forth symptoms which have nothing in common with hypnotism itself. Evidently a lethargical fit can be provoked by suggestion or auto-suggestion, but observation shows us that it can be called forth even by an acute infectious disease, or any other somatic disorder, as well as by emotion. It is possible that the subsequent attacks in our second case were partly provoked by auto-suggestion, but her first attack, as well as the lethargical attack in our first patient, can hardly be attributed to this cause. Charcot's division of grand hypnotism into cataleptic, lethargic, and somnambulistic stages was controverted by the school of Nancy, which considered these stages to be the effect of unconscious habit. Wetterstrand and other observers could not as a rule distinguish Charcot's periods. It seems that if the lethargical syndrome enters in any form whatever into the phenomena of hypnotism or

hysteria, it does not exclude the possibility of a wider view as to the ætiology of lethargy. We rather have to admit that lethargy is not an independent disease, nor even a symptom of any definite disease ; but it may be considered as a complex of symptoms connected with suggestion or auto-suggestion, which may enter episodically into the course of hysteria and of hypnotism, or it may arise as the outcome of emotion, of infectious disease, of intoxication, of auto-intoxication, or may be produced reflexly, or by somatic disease, etc. Its ætiology is evidently complex, although it depends on a single condition. The cause must ultimately act homogeneously, and on defined elements. Thus it brings on a lethargical attack, with its heterogeneous symptoms, as a unity. But wherein lies the effect of the various causes, what does the final evoking factor consist of, and on what elements does it act? Unfortunately it is impossible to give any definite answer to these questions. The vaso-motor theory that might explain the whole matter breaks down just as it does with regard to the pathogenesis of mental diseases. Most likely the vascular phenomena are not of primary but of secondary importance. The anatomico-physiological basis of even normal sleep, in spite of the investigations of Duval and others, has not yet been explained ; the difficulty of explaining it by alterations in the morphology of the cellular processes has increased since the discovery of neurofibrils. L. Loewenfeld perceives the basis of normal sleep in fatigue, in the probable cortical anæmia, and in psychical representation of sleep. Many hypotheses have been advanced in order to explain the nature of hypnotism, and the essence of lethargy. Preyer considered hypnotism as developed from the one-sided effort of attention from fixation, due to the accumulation of the products of fatigue in the corresponding sections of the brain, and to the extinction of their functions. However, to this the objection was made that the ease with which hypnotism can be produced cannot be explained by this theory, nor the prompt awakening by order of the hypnotiser, for it remains completely unknown as to where the products of fatigue disappear to so rapidly. Among other theories the physiological theory of Heidenhain, and Wundt's theory of nerve dynamical phenomena, are noteworthy. We shall not enter into the details of these theories, against which there exist likewise



serious objections. It must be admitted that the lethargical complex, brought about by various causes, must have, from the point of view of psychico-physiological parallelism, a substratum, in which dynamical or chemical molecular perturbations take place, but the true nature of these phenomena can be solved only when we are able to understand nerve conductivity, and the law of activity and rest of the nerve-elements. The anatomico-physiological correlation of the phenomena of consciousness, of sleep, of a series of neuroses, and of lethargy can be treated only when the more elementary processes have been mastered, the further study of which will throw more light on the complicated phenomena than the most promising theory.

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### Clinical Notes and Cases.

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*A Case of Congenital Absence of the Spleen.* By REGINALD G. RICHES, M.R.C.S.(Eng.), L.R.C.P.(Lond.), Assistant Medical Officer, Horton Asylum, Epsom.

OF the abnormalities associated with the spleen, congenital absence is one of the most rare. Hodenpyl, in an article published in the *Medical Record* of 1908, reviews nine cases described by other writers. In the case he records, there was a general compensatory lymphoid hyperplasia in the bronchial, mesenteric, and retro-peritoneal glands, but these, in addition to the increase in the normal lymphoid elements, also contained masses of calcareous material, the result of advanced chronic tubercular disease. In most of the other cases referred to by Hodenpyl, no such hypertrophy of the lymphatic glands existed, nor was it found in the present case, the history of which was as follows :

A. E. B—, a female, æt. 44, was admitted to Horton Asylum on October 1st, 1912, suffering from systematised delusional insanity; the date of onset was not obtainable. Some years previously the patient underwent an operation for what appears to have been an ovarian tumour. There was a scar on the right side of the abdomen, three inches long, situated one inch to the right of the linea alba, and extending upwards from the pubic arch. The scar-tissue was quite healthy, and no signs of a ventral hernia were present. On admission she was in good general health, and remained so until August, 1914, when she was found to have an abdominal tumour attached to the deeper layers of the original wound. The swelling gradually increased in size and became fixed in the abdominal cavity, producing periodic attacks of chronic intestinal obstruction; two days prior to her death patient developed an acute obstruction, but owing to her condition an operation was deemed hopeless.

*Post-mortem examination.*—*Brain:* To the naked eye appeared normal. *Heart:* The left ventricle was hypertrophied, and the aortic and mitral valves were thickened. There was considerable atheroma of the aorta. *Lungs:* No signs of active disease found. *Abdomen:* The omentum, which was adherent to the operation scar, was the site of a large, solid, oval tumour, microscopic examination of which showed that it was a small, round-celled sarcoma with some melanosis and fibromyxomatous degeneration. Secondary deposits were present in the mesentery and in the lymphatic glands in the immediate vicinity of the growth. Elsewhere the glands showed no enlargement. The left ovary and a portion of the left Fallopian tube had apparently been removed by operation, the ovary of the opposite side appeared quite

normal. A loop of ileum was fixed to the growth, but not invaded by it, and as the result of traction had become kinked and obstructed. The other organs presented no unusual features of importance, but careful search in the abdomen and thorax failed to reveal the presence of a spleen.

Considerable attention is, at the present time, being given to the possible production of certain of the well-recognised forms of mental disorders either by an increase or a diminution of the internal secretion of the various ductless glands. This case is interesting in supporting the theory that the other ductless glands are able to vicariously carry on the functions of those which may be absent, or rendered inactive by disease.

This view is upheld, in the case of the spleen, by the results obtained from splenectomy performed after injury or for disease. The mortality of this operation has fallen considerably during the last few years, it being variously estimated by different observers as being between 15 and 35 *per cent.* In a certain proportion of cases following operation, there was some hypertrophy of the lymphatic glands, but this was by no means constant. Most of these reports only cover a period extending over one year after the operation; it is therefore difficult to determine for what length of time the improvement was maintained, but a few are cited as being in good health three years after splenectomy. And it appears that, whatever the functions of the spleen may be, besides the production of lymphocytes, they are capable of being carried on, at all events for a considerable time, by other organs or tissues without the development of serious constitutional disturbances.

I am indebted to Dr. J. R. Lord, the Medical Superintendent, for his kind permission to publish this case, and to Dr. Mott for the microscopic examination of the tumour.

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### Occasional Notes.

#### *Resignation of Dr. Chambers from the position of Senior Co-Editor of the Journal.*

The severance of Dr. James Chambers' fourteen years' active connection with this Journal is a matter of sincere regret for every member of the Association.



The dispassionate and fair-minded judgment which he has always brought to bear in the conduct of the Journal has been of the utmost value during a period in which, owing to the rapid extension of the power and influence of the Association, there have been so many opportunities demanding the exercise of this faculty.

The scientific character of the Journal, sustained throughout his connection with it, has been largely due to his indefatigable efforts in procuring the best matter available for its pages, and to his scientific acumen, based on a comprehensive appreciation of psychiatry in its widest sense.

The genial sympathy, courtesy, and consideration which Dr. Chambers has shown at all times to those with whom he has come in contact are an additional source of regret at his retirement from the Journal, especially to those who have been most closely associated with him.

The Medico-Psychological Association, which calls for so much arduous work and services from so many of its members, is indebted to Dr. Chambers as deeply as to any of those who have borne, or still bear, the burden of voluntary office, or who devote themselves otherwise to its cause—the advancement of psychiatry in all its aspects.

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*Treasury Grant for Psychiatric Research.*

In the minutes of the Quarterly Meeting, held in May last, it is recorded that a letter had been received by the Secretary from the Board of Control, intimating that a sum of £1,500 had been granted by the Treasury for the purpose of research into the causes and treatment of mental disease and mental defect; and at the same time inviting suggestions from the Association as to the best way in which this grant could be utilised.

Research work, on the whole, does not receive enthusiastic encouragement from either Governments or people—who have benefited, and are largely benefiting, by labour of this kind, accomplished through the meritorious and unselfish endeavours of the pioneers of science in various departments—and enlightened action such as this on the part of the Government is a genuine sample of “rare and refreshing fruit” to those who have been looking for a change to occur in the attitude of

almost practical indifference towards the progress of science which, even in this age of progress, has characterised to a large extent the mind of the public generally. We use the term practical advisedly, for, no doubt, the public do interest themselves considerably in scientific discoveries, even welcome them; information regarding them is disseminated, their importance emphasised, the discoverers eulogised in newspapers or popular lectures, but there it ends. Only in comparatively rare instances are any active measures taken for the promotion or endowment of scientific investigation. There are, happily, some few notable exceptions, amongst which Lord Iveagh's princely donation of a quarter of a million to the Lister Institute, and the more recent generous gift of the Misses Lawrence of £4000, to the Royal Society for the furtherance of research deserve honourable mention. This action on the part of the Government is gratifying for more reasons than one. In the first place, and before all, we hail it as an indication that the State is recognising more and more the necessity for, and the importance of, medical research, and, in this instance particularly, of its value in the department of psychiatry. For the past half-century or more, thanks to the leaders in the work of sanitary reform, the securing and maintaining of the *corpus sanum* has received a vast amount of attention, and many measures having that object in view have taken their place among the statutes of the realm. Nor can we complain of any neglect of the insane mind in recent times. The palatial buildings which have been, and are being, erected for the accommodation of the insane, the liberal ménage which is provided for them, the vast improvement in nursing arrangements, and, in many asylums, the very up-to-date medical and surgical equipment which has been instituted: all this testifies to the enhanced and very practical interest which is now generally taken in the welfare of the mentally afflicted. And it is excellent in its way, and a subject for congratulation. Still, when all is said that can be said, all this valuable and philanthropic organisation, involving, as it does, a huge expenditure, is really, as regards the greater part of it, a case of shutting the door after the steed has been stolen. In our institutions we do what we can to cure insanity, or, at any rate, to give our patients an opportunity for recovery. But what is wanted far more is, to





prevent insanity. Now to prevent the occurrence of an evil we must ascertain its cause. When that is discovered, but not till then, can we expect a remedy to be forthcoming. The study of the causation of disease is always a difficult and intricate subject. And especially is this the case as regards the causation of insanity. It requires ability of no mean order, special intellectual training, technical dexterity, industry, perseverance, enthusiasm, self-sacrifice to bring about a successful result. Only a comparatively few are properly qualified to undertake research work; and it is only by long-continued, laborious research that a problem of this kind can ever be solved. Hitherto we have not been without ardent volunteers, the advanced guard, in this department of medicine, who have done, and are doing, invaluable work in this direction; and there are some who think that voluntary and gratuitous service is always superior to state-aided work. That may be, but it is a reflection which does not bring much consolation to those who for the best part of a lifetime devote themselves to work of a very toilsome and unremunerative nature, without the prospect of practical recognition or reward. As a glaring example of the utter disregard of the just claims of investigators in the cause of humanity we may mention the case of Sir Ronald Ross, which was recently made the subject of a question in the House of Commons. As is known to most people, Sir Ronald Ross devoted many years of his life to research work as to the nature of malaria, the outcome of which has been to place within our power the means of preventing this disease; and in so doing has proved himself a benefactor, not merely of his own countrymen, but of the whole human race. Yet, when he had the courage to present a petition asking for some compensation for the professional loss he had sustained during such protracted investigations, it was met with a blank refusal, the only ground for this being, as stated by the Chancellor of the Exchequer, that such a course "was not in accordance with modern usage." However, this grant for psychiatric research is a substantial acknowledgment on the part of the Government that work of this kind is deserving of State recognition. Is there anything more important for the individual than that his standard of mental health should be maintained? Is there anything more deplorable than the ruin of an intellect? And, if this is true in the case of an individual, how much more is

mental stability essential, vitally so, to the very existence of a nation! Does not mental deterioration or degeneration, if at all widespread, spell national decay?

The principle of applying public funds for purposes of psychiatric research has been admitted, and the outlay sanctioned for years past, and in not a few asylums the expense of scientific investigation has been defrayed out of maintenance. But for this, the valuable pathological work which has been done at Claybury, Cardiff, Wakefield and other places could not have been carried out. By giving this special grant from the Treasury the Government has, so to speak, set its seal on, and given its approval to, the principle underlying such expenditure. We are grateful for its recognition of the national importance of the study of psychiatry, and trust that this first grant is the earnest and harbinger of liberal support in the future.

It is also gratifying to the Association that the Board of Control has asked for its co-operation, as to the best way in which the grant can be utilised. Our Association has attained the respectable age of 73 years, and since its birth has been doing work, not only for psychiatric medicine, but in a quiet way, though none the less powerful, for the well-being of the public generally. Its expert knowledge has been, and always will be, at the disposal of the legislature in projected measures of social reform, in addition to lunacy matters, such as the better care of defectives and degenerates of all kinds and the education of children. No less willing and hearty will be the assistance given in response to the invitation of the Board of Control in the important matter of the most profitable directions psychiatric research can be forwarded.

[An "Occasional" on the Annual Meeting is held over till the next number.]

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## Part II.—Epitome of Current Literature.

### 1. Physiological Psychology.

*Psychic Research in the Animal Field (Am. Jour. Psychol., Jan. 1914).*  
Sanford, E.C.

During recent years, the claims made for "thinking" horses—especially "Der Kluge Hans," of Berlin, and the Elberfeld stallions—have greatly exercised psychologists, especially in Germany. Four theories have been put forward to explain the achievements of these animals: (1) the horse can think for himself; (2) the horse cannot

think, but has an extraordinary memory, and a marvellous training; (3) the horse has no need to think, or even to remember, but is guided by signals unconsciously given; (4) the explanation is to be found in the operation of mysterious powers of which we yet know nothing.

Prof. Sanford has given a clear account of the phenomena, and of the history of the attempts to explain them, finally setting forth his own conclusions.

There is no question as to the good faith of the owners of the horses—one a retired schoolmaster, and the other a wealthy tradesman, with scientific tastes—and no attempt has been made to exploit the horses for money. The horses can count, solve arithmetical problems, indicate the value of coins and the signification of playing cards, tell the day of the week and of the month, recognise people by their photographs, etc., conveying their answers by taps with the fore-leg. They even exercise thought-reading powers by answering questions which have only been asked mentally. Both the owners believe that their horses really possess independent intellectual ability. That was hardly a conclusion to be accepted unquestioned by psychologists. Various eminent psychologists have investigated the horses—notably, Prof. Stumpf and his assistant, Dr. Pfungst. Stumpf at last began to adjust his mind to the probability that the horses were really able to think. Pfungst, however, after long observation and careful experiment, came to the conclusion (recorded in a book on *Der Kluge Hans*, now regarded as a classic of animal psychology, and recently translated into English) that the horse he investigated was unable to think, but was guided solely by the very minute muscular indications unconsciously furnished by the bystander, and more especially by the questioner. Pfungst found that most people do make such slight, unconscious movements, and that when they were not made, when the questioner was not acquainted with the answer, or when the horse could not see the questioner, the answers were usually absent or wrong. This result was not accepted by the owner of the Elberfeld horses, who proceeded to investigate Hans on his own account, and also to develop to a still more remarkable degree the abilities of his own horses. He has produced a large, very detailed, and lavishly illustrated work on Hans and his own horses, and attempts to overthrow the results of Pfungst. In this he is not, Sanford considers, altogether successful. He has not proved the mental independence of the animals; but he has thrown considerable doubt on the contention that the horses are always guided by unconscious movements serving as visual signals. We have the testimony of Prof. Claparède, that the horses answered correctly even when no human being was near, and they were watched through a small glazed hole in a stable door. Other similar facts are reported. It is premature to accept the theory of independent thought, but if there is control, it is not yet clear how that control is exerted.

Sanford remarks in conclusion that, whatever theory may be adopted—even the most conservative—it is clear that horses show a responsiveness far greater than had ever been suspected, and these studies are, therefore, “a first-class contribution to comparative psychology.” The chief interest of the experiments, in his opinion, is the closeness of their general features to the human experiences dealt with by the Society for

Psychical Research. In both cases, we have a group of very unusual phenomena, obtainable by some observers and imperfectly or not at all by others—phenomena which some regard as evidence of higher powers, and which yet closely resemble results obtained by trainers and magicians through means avowedly deceptive. There is the same not unnatural unwillingness to permit exhaustive experiments by controversial opponents, and the same disturbing element of unsympathetic experimenters on the subjects as the essential conditions of the phenomena. These, Sanford believes, are real analogies: "When the case of the horses has been followed through to the bitter end, we shall know a good deal more than we do now about the finer and supposedly occult workings of the human psycho-physical machine."

"Misfortunes never come singly," remarks William Mackenzie at the outset of an elaborate study published almost simultaneously with Sanford's, and now we have exactly these same puzzling phenomena in a dog—"the thinking dog of Mannheim" (*Le Problème du Chien Pensant de Mannheim, Archives de Psychologie*, December, 1913). The dog in question, a Scotch (Airedale) terrier, belongs to a lawyer's wife, an intelligent and estimable lady of Bavarian origin. She was one day giving her little girl a lesson in arithmetic, and was unable to make the child add 122 and 2. "Why," she said at last, turning to the dog, "Rolf knows what two and two make; don't you, Rolf?" Whereupon the dog gently tapped his left fore-paw four times on his mistress' arm. This unexpected response to a rhetorical question was an exciting revelation, and the lady (who at this time knew nothing about the horses) began to teach Rolf exactly as though he were one of her own children. In a few months he became as clever as the horses. He not only solves small arithmetical problems, but spells out (by taps with his paw) answers to all sorts of questions which may be asked him at random. The answers are given, not in correct German, but in the local *patois*; they are usually intelligent and sometimes humorous. It is not essential that the bystander should be acquainted with the answer. Rolf can, for instance, swiftly and accurately state the number of violets in a bunch long before the human observer, slowly and after several mistakes, has ascertained the number. These, and many other observations, are recorded in detail by Mackenzie, as the result of an elaborate personal investigation. Mackenzie had previously studied the Elberfeld horses, and believes that the phenomena presented both by the horses and the dog can but be explained as manifestations of intelligence. He is confirmed in this conclusion by the marked signs of exhaustion (sometimes including nasal hæmorrhage) shown by Rolf after the experiments. Professors Claparède and Larguier des Bancelles append to Mackenzie's elaborate article a short paper, describing their own visit to the Mannheim dog. They obtained from Rolf, after some resistance, accurate descriptions of pictures which, they believe, his mistress could not see. But they were only able to devote one day to the investigation, and they are unable to bring forward any solution of the enigma. It may be added that Gruber has also lately studied Rolf (*Münchener med. Woch.*, No. 4, 1914), and his conclusions agree with Mackenzie's in decisively affirming the dog's real intelligence.

HAVELOCK ELLIS.

LX.

42

*The Effects of Strychnine on Mental and Motor Efficiency.* (Amer. Journ. Psychol., Jan., 1914.) Poffenberger.

This investigation was undertaken at Columbia University to determine the psychic effects of ordinary therapeutic doses of strychnine, more especially as compared to caffeine. The experiments were carried out in the Psychological Laboratory on seven subjects, and covered thirty days. The drug was given in capsule form to facilitate the experiments necessary to eliminate the influence of suggestion. Various tests—tapping test, colour-varying test, multiplication test, etc.—were employed. An important test in this case was that for steadiness, which consists in holding a metal rod steadily in a small hole, every contact with the sides of the hole being electrically recorded. All the experiments and their results are here set forth and discussed. In all cases, there was evidence of the influence of the drug on the circulation, usually by reducing pulse-rate and increasing blood-pressure. The motor tests, so far as they showed anything (chiefly in the steadiness test), gave a poorer record after strychnine. The mental tests showed no clear effect of the drug at all. There was no evidence for stimulation followed by depression. The general conclusion is that the influence of strychnine in ordinary doses on the motor functions is, if anything, unfavourable, and on the psychic processes there are no effects at all.

These results contrast with Hollingworth's similar experiments with caffeine, which showed marked effects both in stimulation and retardation.

HAVELOCK ELLIS.

*Psychic Abnormality and Limited Responsibility* [*Abnormalité psychique et responsabilité relative*]. (L'Encephale, Oct. 10th, 1913.) Charon and Courbon.

The question of criminal responsibility in what Maudsley has so aptly described as "borderland cases" has occupied a prominent place in French alienist literature during the last few years. It is discussed in a rather academic spirit in the present paper, in which the authors argue in favour of distinguishing a special category of psychically abnormal individuals, marked off on the one hand from the normal, and on the other from the definitely insane. Such individuals are not to be regarded as "demi-fous," that is to say, their abnormality is not to be considered as an attenuated or imperfectly developed form of insanity, and they are not, accordingly, to share in the total immunity from penal treatment which is claimed for the insane offender, whatever be the variety or degree of his insanity. The authors maintain that these psychically abnormal persons possess a relative will-power (*capacité de détermination*) which is limited to certain acts, but is not qualified with respect to other acts; and they hold that it belongs to the province of the alienist expert to determine in each individual case the degree of will-power and the consequent degree of responsibility for the criminal act imputed. They quote an illustrative case of an unstable youth of defective intellect whom they had to examine with reference to his mental state on two occasions, the first time on account of a petty theft, and the second time, a few months later, when he was charged with the murder of his mother. Applying their theory of a limited power of



control in certain specified directions, they formulated the opinion that the offender was not responsible for the theft, but was responsible for the matricide. Only very vague indications are given of the grounds on which this extremely subtle judgment is based. The paper is chiefly interesting as showing the futility of efforts to translate into medical language conceptions which belong altogether to the sphere of legal and political method.

W. C. SULLIVAN.

## 2. Clinical Psychiatry.

*Alcohol and Delirium Tremens* [*Alcool et delirium tremens*].  
(*L'Encephale*, Jan. 10th, 1914.) Demole.

This paper gives the results of an investigation directed to determining the presence of alcohol in the body-fluids of patients suffering from delirium tremens. M. Demole has examined the urine, blood, and cerebro-spinal fluid in twenty-three cases of chronic alcoholism, in ten of which delirium tremens developed while the patients were under observation. The author employed the qualitative reaction of Lieben, and the quantitative method of Nicloux. His conclusions are as follow :

(1) At the onset of delirium tremens, alcohol is found in the urine, blood, cerebro-spinal fluid, saliva and breath of the patients, if they have absorbed sufficient of it during the preceding twenty-four hours.

(2) The elimination of alcohol takes place within twenty-four hours, just as occurs with normal healthy persons. The delirium continues its evolution after the complete elimination of the drug.

(3) Delirium tremens develops, in many cases, when there is no trace of alcohol in the organism. The disease is therefore independent of the recent consumption of alcohol.

(4) There is no ground for the treatment of the condition by the method of gradual reduction of the alcoholic intake.

M. Demole suggests that the detection of alcohol in the breath and body-fluids may be a valuable aid to diagnosis in some doubtful cases, especially in medico-legal practice, and he describes a simple apparatus for the clinical use of the bichromate reduction method for this purpose.

W. C. SULLIVAN.

*Hysteria and the Hysteroid Syndrome* [*Bull. de la Soc. de Méd. Ment. de Belg.*, Dec. 1913]. A. Austregesilo.

This writer insists on the distinction between true hysteria and what he calls the hysteroid syndrome. The former is a morbid condition whose symptoms are due to auto-suggestion, and are curable by persuasion; the latter resembles it, but occurs in conjunction with mental or nervous disease, and is unaffected by suggestion.

To true hysteria alone belong fits, paralyses, contractures, tremors; on the sensory side, anæsthesia, hyperæsthesia, and pains; on the mental side, delirium, aphonia, stammering, mutism, and amnesia; on the visceral side, hiccough, cough, and anorexia.

Alterations in the patellar and ocular reflexes, paralyses of organic origin, alterations in the cerebro-spinal fluid, trophic and vaso-motor

changes, involvement of sphincters, albuminuria, and pyrexia—all these are excluded from the category of hysteria.

Hemianæsthesia, and contractions of the field of vision, are ascribed by this writer, to unconscious suggestion on the part of the physician. Cases which much resembled hysteria, and eventually declared themselves to be dementia præcox, first drew Dr. Austregesilo's attention to the occurrence of a "false hysteria." Several observers had previously noted that hysteria and dementia præcox often coincide. This writer has also been able to follow up a case which simulated hysteria, and turned out to have a cerebral tumour; this falls in with the old observation that cerebral tumour cases often show infantile characteristics. Other cases, of alcoholic epilepsy and manic-depressive insanity, have been found by this writer to have many features in common with hysteria, and he maintains that this hysteroid syndrome can accompany any form of mental disorder. Are such cases the result of the concurrence of hysteria with other diseases? Dr. Austregesilo does not think so, since the hysterical symptoms are unaffected by suggestion, and never disappear entirely so as to leave the mental disease pure. He concludes that the hysteroid syndrome is as distinct from true hysteria as paranoid dementia is from true paranoia.

H. W. HILLS.

*Neurasthenia of Syphilitic Origin* [*Les Neurasthénies d'origine Syphilitique*]. (*Rev. de Psychotherap.*, Nov., 1913.) Berillon.

Neurasthenia is now a distinct illness of well-defined symptoms. It is an acquired neurosis, due to accidental causes. These may be physical or psychical, the functional disturbance resulting from actual injury, or an infection or intoxication. A fact which has hitherto not been sufficiently emphasised is the frequency of this form of neurosis in persons suffering from syphilis.

It is difficult to apportion accurately the share which should be ascribed to shock, to the specific infection, and to intoxicant remedies. But we recognise the existence of a neurosis which finds in syphilis the pretext, the starting-point of its evolution. Patients will say after infection that they have become morally infected. That very clearly points to the fact that, besides the natural and ordinary anxiety about an infectious disease, many other moral and social considerations arise to worry and harass the mind.

The only remedy which the writer has found to be of any use is Dr. Query's serum. The cure must not be considered complete until the patient, with regained confidence of safety, has also regained the command of himself mentally and intellectually.

COLIN M'DOWALL.

### 3. Treatment of Insanity.

*The Treatment of Acute Psychoses by Bromide of Radium and Radio-active Serums.* (*Rev. de Psychiat. et de Psychol. Expériment.*, Dec., 1913.) Dominici, Marshand, Chéron, and Petit.

These writers note the fact that acute mental disturbances are often affected for the good by intercurrent infections. They assume that

these effects are due to alterations of the general nutrition, and attempt to induce the latter by injections of radio-active substances.

For this purpose they have employed :

- (1) Simple horse serum.
- (2) Serum to which  $\frac{1}{20000}$  milligramme of radium bromide was added.
- (3) Serum from a horse injected with radium sulphate.
- (4) Serum as in (3), with the addition of  $\frac{1}{20000}$  milligramme of radium bromide.
- (5) Isotonic solution in water of radium bromide.

They report favourable effects from the employment of all these classes of injections, and especially from (4).

They found that the cases which benefited from simple serum were those that had well-marked serum reactions, and ascribe the good effects to this factor. But no such correlation was found between serum reactions and the benefits resulting from the radio-active injections, and the writers consider that the radium salts themselves proved beneficial. They ascribe the latter effects to the destruction of toxins.

In all, twenty-eight cases received injections, but they were so heterogeneous that further conclusions cannot safely be made. However, the writers are hopeful that this method of treatment may prevent dementia in cases of dementia præcox, if the latter are taken in time.

H. W. HILLS.

*Twenty Years' Work on Nephroptosis [Reprint from Lancet-Clinics],*  
1913. Suckling, C. W.

In this brochure, the writer summarises his views on the maladies attributable to dropped kidney, and it would take considerable space to enumerate all the diseases which, according to him, may be ascribed to this cause. He includes cases of insanity, and describes a number cured by fixation of the offending organ.

The difference of opinion that exists on the question of nephroptosis may be illustrated by the fact that, although the author expressly excludes ptosis of other viscera, a quotation from an article by Gustav Moerod, in *The Practitioner* for November, 1913, runs as follows: "We are still waiting for a single case in which the movable kidney syndrome can be demonstrated to be due to movable kidney alone."

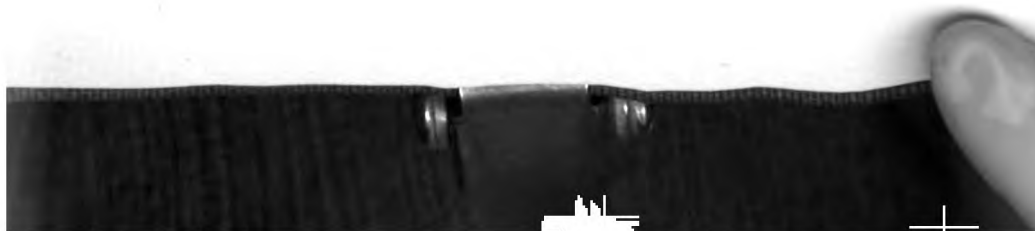
Dr. Suckling considers that the mental symptoms arise from toxæmia caused by ureteral obstruction, but until this toxic theory has gained more universal acceptance he appears likely to remain largely alone in his advocacy of "nephropexy as a cure for 80 per cent. of insanity."

NAPIER PEARN.

#### 4. Sociology.

*The Legal, Legislative, and Administrative Aspects of Sterilization.*  
(*Eugenics Rec. Off. Bull.*, No. 10, B. 1914). Laughlin, H. H.

This is the second of a series of reports now being issued by the Committee formed to Study and Report on the Best Practical Means of Cutting Off the Defective Germ-Plasm in the American Population.



Mr. Laughlin is Secretary of the Committee which is aided by an advisory committee of distinguished experts. Other important aspects of the matter will be set forth in future reports. In the present report, it is taken as assumed that heredity is a leading factor in the production of defectives. It is also to be accepted that the solution proposed by the Committee is "a segregation programme, supported by sterilization whenever a potential parent of anti-social offspring is returned to the general population."

The present report mainly consists of a careful and thorough analysis of the existing laws (as well as those proposed, vetoed, and revoked) in the various American States, a discussion of the actual working out of the existing laws, a criticism of those laws, a proposed "Model law" recommended by the Committee, and calculations as to the working out of the proposed programme. The report is valuable, as it has hitherto been extremely difficult to obtain any comprehensive and reliable account of the American sterilization laws, and their operation.

Such laws are not, of course, absolutely necessary. As a matter of fact, it appears that more sterilizations have been carried out in the absence of laws than under the laws. The consent of all persons concerned is obtained, and no legal or professional complications have resulted. This is a noteworthy point in view of the nightmares that are sometimes evoked.

The Committee is nevertheless, however, firmly convinced that, in view of the extremely large number of persons whom it will probably prove necessary to sterilize, there should be legal regulation. At the same time it severely criticises nearly all the existing laws, which have so far been prompted mainly by three motives: (1) eugenical, (2) punitive, and (3) therapeutic. Punitive sterilization the Committee is strongly opposed to, as contrary to all modern methods; while the authorisation of therapeutic sterilization is quite unnecessary, as that is governed by the ordinary surgical rules.

It appears that, at present, twelve of the United States possess sterilization laws. In most of them, the law is not carried out. It is most effective in Indiana, where some 300 men have been vasectomized, in 176 cases at the request of the men themselves. The Committee criticises the incompleteness of the investigation into former history in many of these cases, but could not find a single case in which a potential parent of valuable citizens had been rendered sterile. Due credit is given to Dr. H. C. Sharp—who began carrying out the operation long before the law was passed—for his energy and courage in initiating this important experiment. In nine States, Bills have been introduced into the legislatures, but have been defeated or are not yet passed. In five States, Bills have been passed, but have been vetoed by the governor, or by the referendum. The case of Oregon is regarded as of special interest, as it is the only State in which the referendum has been invoked, and apparently the only State having an organised opposition to sterilization; the opposing votes were as five to four. It is noteworthy that the chief promoter of the Act was a woman physician; the leader of the successful opposition was also a woman. The Act, as it stood, is not opposed by the Committee.

Sterilization without any Act at all has been found to work easily

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### Part III.—Notes and News.

#### THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE Seventy-Third Annual Meeting was held at Norwich on Tuesday and Wednesday, July 14th and 15th, 1914, under the Presidency, in the early proceedings, of Dr. James Chambers, and later that of Dr. David G. Thomson.

There were present: Drs. T. Stewart Adair, Fletcher Beach, W. H. Bailey, F. St. John Bullen, John Bain, David Bower, M. A. Collins, R. H. Cole, James Chambers, R. B. Campbell, T. Drapes, A. W. Daniel, Francis H. Edwards, H. S. Gettings, J. R. Gilmour, J. W. Geddes, J. W. Higginson, H. Gardiner Hill, T. B. Hyslop, John Keay, Norman Lavers, W. J. Menzies, Alfred Miller, Richard Miller, P. W. MacDonald, J. W. McDowall, E. Mapother, W. J. Nelis, H. Hayes Newington, Bedford Pierce, David Rice, D. Rambaut, William Reid, R. G. Rows, J. G. Soutar, R. C. Stewart, J. Noel Sergeant, W. H. B. Stoddart, T. E. K. Stansfield, T. Seymour Tuke, F. R. P. Taylor, David G. Thomson, and J. Wootton.

*Visitor:* Thomas Beaton.

#### PRESENT AT THE COUNCIL MEETING.

Drs. James Chambers, T. S. Adair, R. B. Campbell, R. H. Cole, T. Drapes, J. M. Keay, A. A. Miller, W. F. Nelis, H. H. Newington, R. G. Rows, J. Noel Sergeant, D. G. Thomson, T. Seymour Tuke, and M. A. Collins.

#### MORNING SESSION, TUESDAY, JULY 14TH.

Held at the Norfolk County Asylum, Thorpe, by the courtesy of Dr. Thomson and the Asylum Committee, Dr. James Chambers in the Chair.

#### MINUTES.

The minutes of the last annual meeting, having already appeared in the Journal were taken as read and approved.

#### OBITUARY.

The PRESIDENT said that since the Association last met, another of the senior members had passed away, namely, Dr. Neil, of Warneford Hospital, Oxford. Dr. Neil had devoted his professional career to the practice of psychiatry, and for seventeen years was medical superintendent of Warneford Hospital. The present was not the occasion on which to recount the history of his life-work, but it was that of a man whose character and abilities specially fitted him for ministering to the patients under his care; and who had gained the esteem and affection of his colleagues. He was sure it would be the wish of the Meeting that a message of condolence be sent to Mrs. Neil.

The suggestion was approved by the members upstanding.

#### ELECTION OF OFFICERS, COUNCIL, AND STANDING COMMITTEES.

Drs. Edwards, Macdonald, Stewart, and Stansfield, were appointed scrutineers. These gentlemen reported that the Officers and Members of Council as proposed had been unanimously elected.

The PRESIDENT said that the list of representative Members of Council and of Examiners for the ensuing year which was before them on the agenda, the latter both for the Professional Certificate and for the Nursing Certificate, had now been elected.

#### ELECTION OF AUDITORS.

The PRESIDENT said that Dr. Langdon Down retired this year, and he would be glad of a nomination to fill the vacancy.

Dr. Edwards proposed, and Dr. Stansfield seconded, the election of Dr. Bower to fill the post of Auditor. Carried.

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# THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—For the Year 1913.

## REVENUE ACCOUNT—January 1st to December 31st, 1913.

1912. £ s. d.	Dr.	Expenditure.	£ s. d.	Cr.	1912. £ s. d.
449 7 8	To Journal—Printing, Publishing, Engraving, Advertising, and Postage ...	...	586 13 11	...	49 11 3
360 0 6	" Examinations, Association Prizes, and Clerical Assistance to Registrar ...	...	356 3 5	...	210 0 0
47 18 2	" Petty Disbursements, Stationery, Postages, etc. ...	...	41 9 5	...	37 4 2
183 9 4	" Annual, General and Divisional Meetings ...	...	152 15 6	...	41 19 1
82 14 8	" Rent of Premises at 11, Chandos Street, care of Office, etc. ...	...	103 2 0	...	...
8 8 0	" Audit and Clerical Assistance ...	...	107 14 11	...	...
229 15 5	" Miscellaneous Account ...	...	30 15 1	...	...
15 11 6	" Library Account ...	...	...	...	...
1377 5 3	Balance ...	...	1387 1 3	...	...
208 0 9			223 16 11		
1585 6 0			£1610 18 2		£1610 18 2

## BALANCE-SHEET—31st December, 1913.

1912. £ s. d.	Liabilities.	£ s. d.	Assets.	£ s. d.	1912. £ s. d.
0 13 0	To Journal Account, balance ...	...	By Lloyd's Bank—Bankers	...	...
0 4 9	" Petty Disbursements Account, balance ...	...	" Stocks value at this date:	...	...
57 7 6	" Examinations Account, balance ...	...	" New Zealand, 3½ per cent.	...	...
12 10 5	" Meeting Account, balance ...	...	Do. (Hack Tuke Memorial)	...	...
41 4 8	" Gaskell Fund ...	...	Victoria, 3 per cent.	...	...
26 8 0	" Rent, Account ...	...	Do. 3½ per cent.	...	...
32 5 9	" Miscellaneous ...	...	Manchester Corporation, 3 per cent.	...	...
0 2 2	" Library ...	...	New South Wales, 3½ per cent.	...	...
170 16 3	Balance—Balance at 1st January ...	2397 1 6	Midland Railway Preference, 3½ per cent.	...	...
	Add: Balance of Revenue Account ...	223 16 11	New South Wales, 3½ per cent.	...	...
		2620 18 5	Midland Railway Preference, 3½ per cent.	...	...
	Deduct:		Midland Railway Preference, 3½ per cent.	...	...
	Decrease in Value of Stocks	...	Sales Account, balance	...	...
	Subscriptions written off	...	Subscriptions Account, balance	...	...
		2463 5 2			
2397 1 6		£2730 2 6			£2730 2 6
2482 9 0					
55 19 6					
29 8 0					
85 7 6					

(Signed) H. HAYES NEWINGTON, TREASURER.  
(Signed) WOODINGTON & HOLY, C.A.

R. PERCY SMITH DOWN } AUDITORS.  
£2730 2 6

The Special Committee appointed in November, 1911, to consider the status of medical officers, and of psychiatry, in this country has held a large number of meetings, and presents its report.

The Parliamentary Committee has met regularly, and the Special Committee appointed to watch the Mental Deficiency Bill has continued to sit, and is now considering the new regulations issued under the Act. The progress of the Defective and Epileptic Children's Bill has been watched, and opposition has been offered to that part of the L.C.C. (General Powers) Bill which seeks to deprive the Asylums Committee of its statutory powers under the Act of 1890.

The Educational Committee has met regularly, and presents a report.

The Gaskell Prize for 1913 was awarded to Dr. Rees Thomas, of Hellingly Asylum. The Bronze Medal for 1913 to Dr. McKinley Reid, of Horton Asylum. A second prize for a paper read at a Divisional meeting was awarded to Dr. J. Clarke, of Banstead Asylum.

The entries and results of the Nursing examination have been as follows: *Final*—Entered in November 141; withdrawn 7, successful 71, of whom 6 were excellent. Entered in May 470; withdrawn 3, successful 314, of whom 13 were excellent. *Preliminary*—Entered in November 334; withdrawn 22, successful 231. Entered in May 1165; withdrawn 55, successful 746.

The Journal continues to be much appreciated, and has a highly gratifying circulation. The Council with great regret records that Dr. James Chambers is retiring from the Editorship—a great loss to the Association—and feels that a record of grateful thanks for his untiring work in the past is due to him. Dr. Chambers has consented to allow his name to be added to the Editorial Committee which has been renominated. Drs. Lord, Lewis C. Bruce, and T. Drapes have been reappointed Editors.

Last year, £20 was granted to the Library Committee, which presents a report.

Another grant of £10 was made to the Epsom College Benevolent Fund.

A committee appointed in February met at the British Medical Association and Medico-Legal Society to discuss a Bill on Voluntary Mental Treatment, which had been prepared by the Medico-Legal Society. Many suggestions were made by the members of the Medico-Psychological Association and agreed to, and the Bill is to be introduced into the House of Lords.

Drs. James Scott and Percy Smith were appointed to act with a committee of the British Medical Association which was considering the state of the law with regard to legal responsibility for crime.

Divisional Meetings have been held, with good attendances, and the membership reported to the Council in May was as follows:

South-Eastern . . . . .	258
Northern and Midland . . . . .	153
South-Western . . . . .	103
Scottish . . . . .	101
Irish . . . . .	53

Thanks are due to the Treasurer, Registrar, and Secretaries for their work so willingly given to the Association.

The President, Dr. James Chambers, has presided over the meetings with dignity and courtesy.

The Hon. Secretary (Dr. M. A. COLLINS) read the Report of the Council, and concluded by moving its adoption. Dr. MacDonald seconded. Carried.

#### THE TREASURER'S REPORT.

The TREASURER (Dr. Hayes Newington), in submitting the accounts of the Association, said he had no comments to make except that the Association was in a very satisfactory condition, in spite of a large amount of default on the part of some of its members. Year by year, it was necessary to write off an amount on that account, and it was dispiriting that that amount should be increasing. But, though there was such shortage in that way shown at the end of the year, part of it was made good in the next year, and he was pleased to say that two or three of the gentlemen, who were in peril of being wiped off, had lately saved themselves by paying up the arrears. Another point to which he desired to draw attention was the enormous depreciation of the Association's stocks. Last year that depreciation

amounted to more than £100. When he first became Treasurer he was rather taken to task by experts because he insisted in valuing the Association's stock each year, and it was then rising; many people continued to value at the price originally given. But he had always insisted, in case the Association should be wound up at any time, that the value for the time being should be the value entered in the current balance-sheet. He now felt thankful that this policy had been pursued. In the first few years, the stocks held by the Association appreciated, and so there was a considerable margin in the valuation above the amount given. Now it was the other way, and there was satisfaction that the amount stated gave the actual cash value. The surplus of income, however, was now so considerable that he would be asking the Council for permission to make another investment towards the end of the year. He moved the adoption of the Report.

Dr. BOWER seconded, and asked whether there was any appreciable annual loss. He took it, from the way in which the funds had been invested, that there was not much loss on interest.

The TREASURER replied that this was so; the interest stood at the same figure every year.

The PRESIDENT, in putting the motion, said it was unnecessary for him to assure the Treasurer how greatly members appreciated his work.

Carried.

#### REPORT OF THE EDITORS.

The Journal has maintained its average circulation, and the cost of its production has been about the same as that of the previous year.

The contributions have been of varied interest, and include papers embodying the results of valuable original research, as well as work of purely clinical observation; nor have the more theoretical, and to many by no means the least interesting, aspects of insanity been overlooked.

A gratifying feature has been the amount of good work done by junior members of the Association, work which the Editors gladly welcome, and which they feel sure will always receive appreciation and encouragement from the Association at large.

Dr. Chambers tenders his resignation with regret, and in doing so begs to thank the Association for the loyal support which has always been accorded to him.

The HON. SECRETARY read a letter from Dr. Lord apologising for his absence.

Dr. DRAPES read the report and moved its adoption.

Dr. FLETCHER BEACH seconded.

Carried.

#### REPORT OF THE AUDITORS.

We beg to report that we have examined the Treasurer's accounts and vouchers for payments made on behalf of the Association, and find them in perfect order. The sum received from dividends has increased by £13, and there is also an increase in the receipts from fees for the nursing examinations. The excess of assets over the Association's liabilities stands at the satisfactory sum of £2,463 on December 31st, 1913. This is an increase of £66 over the year before, in spite of the fact that depreciation in the price of Trustee stocks in the past year has necessitated the writing off of no less a sum than £101 from the value of the Association's capital.

We regret to notice that no less a sum than 54 guineas was written off last year for non-payment of subscriptions, and that 168 subscriptions due in 1913 had not been paid at the end of the year. We must again draw attention to the fact that this entails a heavy and quite unnecessary burden of work and correspondence on the Treasurer and those who assist him.

We understand that the Journal is now stopped at an early period for non-payment of subscription, but nevertheless the Association loses money by copies of the Journal supplied for a time to those who often eventually do not pay. This loss is, however, minimised by the Treasurer as much as possible, and we understand that he now, in addition, is to send a list of the names of those who have not paid to the respective Divisional Secretaries.

We wish to express our sense of the deep obligation under which the Association



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## TREASURY GRANT FOR RESEARCH WORK.

The PRESIDENT said that, in connection with the resolutions which were sent from the last Quarterly Meeting to the Board of Control, the Chairman of the Board of Control had courteously written to him, as President, a letter, in which he said it would be advisable for a small committee to be formed to deal with the matters referred to. Accordingly two Commissioners of the Board had been appointed, and the chairman kindly requested that two members of the Association be appointed to confer with them. He brought the letter before the Council, and they unanimously recommended the appointment of the President-Elect, and the Chairman of the Status Committee.

Approved.

## REPORT OF LIBRARY COMMITTEE.

During the past year a considerable number of new books have been added to the library. A list of these is published from time to time in the Journal.

Two further journals are now circulated among the members: *The Review of Neurology and Psychiatry*, and *The Psycho-Analytic Review*.

The Committee desire to apply for a grant of £25 for the expenses of the coming year.

EDWARD MAPOTHER, *Hon. Secretary*.

The SECRETARY said the Report had been circulated, and the chief feature of it was a request for a grant of £25 for the year. He proposed its adoption.

Dr. FLETCHER BEACH, in seconding, said there were a number of new books added to the library, and lists of these were published from time to time, so that members wishing to get books from the library knew what books it contained, and the catalogue had been brought up to date. It was also desired to bind in volumes a number of journals which had been bought, and to add some recent works.

Dr. R. H. COLE said that as Dr. Hyslop lived near the library, he would move that gentleman's name to be added to the Library Committee.

Dr. HYSLOP explained that, at the present time, he was doing a considerable amount of reference work, so that he had had occasion to overhaul every book and pamphlet in the library. He had great pleasure in supporting the motion for the grant, so that the library could be improved. It contained many valuable journals which it would be difficult to replace. If he could be of service in connection with the library he would be only too pleased.

The PRESIDENT said he hoped that the name of Dr. Hyslop would be accepted on the Library Committee. The grant had the Council's commendation.

The TREASURER said the subject was brought forward last year, and the idea was that an annual grant should be made and adopted by the Association. But, as Treasurer, he felt it his duty to point out that it was dangerous to vote an annual sum to any committee, unless the Council or the Annual Meeting kept a controlling hand over the expenditure. It was agreed that the Library Committee should make its application for a grant not exceeding £25, and in doing so it would have to justify its expenditure during the past year. The Library Committee seemed to have justified its expenditure and earned the grant.

Dr. EDWARDS desired to ask a question on a point with regard to the library which many members might not be aware of. It was in reference to the circulation of books among members who did not reside in, or near, London. Were there funds allocated by which country members could obtain books of reference, or was the library for the benefit of members who lived near London, and could call for themselves? Unless there were means for circulating books amongst those who lived at a distance from London, the value of the library would seem to be a limited one.

Dr. COLLINS replied that there was a Resident Librarian who sent the books out which were applied for.

Dr. COLE said any member could have any book in the library at the expense of threepence. There were very few such applications, therefore the library was used principally by London members. All that was required was that the member applying should pay the postage, and the amount of that was fixed at

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forth as a recommendation from the Association, and he thought it would be met by the appointment of various other persons who could be used for certifying purposes. It rested with the Association to decide whether this recommendation should go forth as it was now, on the assumption that it would be met in that way by the various local authorities. With regard to the work of the Central Association for the Care of the Mentally Defective—on which Association there are several members of our Association—as chairman of the special committee appointed by our Association to further consider the working of the Mental Deficiency Act, he had to report that the Central Association had taken the necessary steps to register itself as an incorporated association, and the constitution committee had drawn up a memorandum and articles of association which have to go to the Board of Trade. Inasmuch as an incorporated association cannot legally undertake work which is not set out in the memorandum, the memorandum had been most carefully prepared, and so framed that in the event of any alterations becoming necessary the heavy costs of such alterations may be obviated. The question of the composition of the future council of the Central Association, which proves to be a peculiarly difficult one, has been postponed till next year, when the Central Association will be in a better position to realise the work it is able to do and the best methods of carrying it out. In attaching his signature—as one of your representatives—to the memorandum and articles of association for the purposes of registration under the regulations of the Board of Trade, he had incurred on behalf of the Medico-Psychological Association a liability of a sum not exceeding £1, should the Central Association at any time be wound up. At the last meeting of the special committee it was thought to be advisable and right that, inasmuch as there was still much ambiguity and difference of opinion with regard to the definition clauses of the Mental Deficiency Act, the subject might with advantage be further elaborated, and its deliberations ratified, by those most competent to express opinions, and the method of doing this is by the preparation of a memorandum which shall be approved by the special committee, and read before this Association at the November meeting. The only other matter to which he referred was the fact that the Central Association had thought it advisable for administrative purposes to subdivide its membership into local administrative committees, and that the two representatives of this Association had been relegated to sub-committees. Needless to say, such a procedure had been objected to by reason of the fact that this Association's representatives were chosen for wider than for mere local administration. With regard to the clauses in the General Powers Bill of the London County Council disestablishing the Asylums Committee as a statutory body, he had acted in accordance with the instructions of the Association, and brought their views before several Members of Parliament. He concluded by moving the adoption of the report.

Dr. HAYES NEWINGTON said he had much pleasure in seconding it, and he would ask the Annual Meeting to empower him, as Treasurer, to meet any liability which Dr. Hyslop laid himself open to in guaranteeing £1. He felt sure that action would be endorsed by the Association. Dr. Hyslop had done a good deal of work in connection with mental deficiency, and it was very satisfactory to know that he had led certain powerful Members of Parliament on to the track of that obnoxious proposal of the London County Council. He was sure the Association would feel very grateful to Dr. Hyslop for the action he had taken.

Dr. COLE asked whether, assuming that this report was adopted, the Secretary would proceed further with the suggestions, and communicate with the Board of Control at once.

Dr. HAYES NEWINGTON asked whether the Committee was being reappointed.

Dr. COLLINS replied that the Committee ceased to exist now unless it were reappointed.

Dr. NEWINGTON said it was an independent Committee of the Association.

Dr. COLLINS said he would forward the resolutions on receiving them from the Secretary of the Committee.

Dr. HYSLOP, referring to the proposal which will be brought before the Autumn Meeting, said it was felt in certain quarters that there were many people who, with no knowledge of mental conditions, etc., were inclined to imagine that they were in a position to define the borderline between insanity and mental

deficiency on the one hand, and between mental deficiency and mental health on the other, and they would probably receive some support from the Educational Authorities throughout the country, and unless the Association (the members of which were the only persons competent to deal with the question) took up a definite standpoint on the definition clauses, he feared it would leave an opening for other persons to create most vexatious difficulties. It was felt to be so important that at the Autumn Meeting there would be an effort to present a definite guiding line. It would be accepted most willingly by the Board of Control, who had differences among themselves, and it would relieve the Educational Authorities of a good deal of stress and strain. It seemed imperative that the Medico-Psychological Association should take the lead definitely, and that the Association's memorandum should be the accepted memorandum dealing with the whole question. If there were any differences of opinion, any such differences ought to be cleared up by members of the Association. The sooner the Committee got to work the better, and no time should be wasted.

Dr. BOWER said he thought the Committee should be reappointed.

The PRESIDENT said he proposed that that should constitute a separate motion.

The Report was adopted, and, on the suggestion of the President, its adoption was accompanied by grateful thanks to the Committee for the work they had done.

Dr. BOWER now moved that the Committee be reappointed. He did not know whether the Chairman of the Committee, in view of the extra work foreshadowed, would wish additional members of it.

The PRESIDENT said small committees did the best work.

Dr. COLE pointed out that the Committee possessed power to co-opt.

Dr. SEYMOUR TUKE seconded the reappointment of the Committee.

Carried.

#### STATUS OF MEDICAL OFFICERS AND PSYCHIATRY COMMITTEE (see p. 667).

The PRESIDENT said it had been proposed—and, he thought, with very good reason—to follow the procedure adopted last year and postpone the consideration of this matter until the following day, at noon. The Status Committee had sent in their Report, which was a very important one, and he hoped all those present had read it. He therefore suggested that the Meeting receive the Report to-day, and discuss it to-morrow.

Agreed.

#### PROPOSAL BY COUNCIL—SUGGESTED ALTERATION IN THE BYE-LAWS.

Dr. COLLINS brought forward the following proposal by the Council: "That Bye-laws 73, 74, 80, 87, 89, be so altered that the words 'two months' read 'six weeks,' and that Bye-law 90 be so altered that the words 'one month' read as fourteen days." He explained that the Bye-law requiring a certain interval had been broken. Owing to the Nursing examinations, which had to be held in May, it was very difficult to get an interval of two months between the May Meeting and the July Meeting, and it was suggested last year that it was not necessary to have this extreme length of interval, six weeks being sufficient, also that a month's notice of the Annual General Meeting with the agenda was not necessary. It meant practically the occupation of every day after the end of the May Meeting to get out the agenda; and members were not sure whether they had received an agenda or not, owing to the length of time it was received before the meeting. The Council therefore thought six weeks was a long enough interval between the May and July meetings, and that fourteen days was long enough for members to receive the agenda before the meeting. He proposed that that alteration be made.

Dr. STANSFIELD seconded.

Dr. BOWER said the reduction to six weeks would cover all the difficulty.

Dr. COLLINS said the difficulty only arose when Whit Monday fell awkwardly. Last year he broke the rules, but this year there was no occasion to.

Dr. BOWER thought that, while they were about it, there should be a sufficient alteration to cover all occasions.

Dr. BEDFORD PIERCE said it was not his wish to move an amendment. He thought it desirable that the agenda should not be sent out more than fourteen days before the Annual Meeting, and yet it might be desirable in some way to give

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members a more definite intimation of the date and place of meeting than they received now, if they did not happen to notice it in the Journal. It might be well to send a postcard to each member a month before, saying where the meeting would be held, and stating that the agenda would follow in a fortnight.

Dr. COLLINS replied that he had made a point of putting at the end of the agenda of the May Meeting a note saying that the Annual Meeting would be held at such and such a date and place. He did not know what further notice was needed.

Dr. BEDFORD PIERCE replied that a separate notice might attract members' attention better.

Dr. HAYES NEWINGTON said a postcard a month before would be sufficient to comply with the rules as to the notice of the Meeting. Considerable expenditures were incurred for extra postages in regard to reports, many of which could not be ready in time.

Dr. BEDFORD PIERCE said he was very reluctant to give the Secretary additional work, and he knew how much work he had to do for the Association; yet there was something to be said in favour of a simple postcard being sent a month before stating when and where the Annual Meeting would be held, and nothing else. Some members were rather careless, and, if they received a big bundle of papers they put them on one side and might not look at them for a fortnight.

Dr. MACDONALD said he sympathised with Dr. Collins in having to do this. Surely if he notified the fact on the May Meeting agenda, and it was stated in the Journal some weeks afterwards, that should suffice, and their carelessness should not be allowed to add to the expenses of the Association.

The proposals of the Council were agreed to, and the PRESIDENT suggested that the other matter should be left over, and that the Hon. Secretary should continue the same procedure as he had adopted during the past year.

#### PROPOSAL BY DR. ROWS ON BEHALF OF THE MEDICAL OFFICER AND PSYCHIATRY COMMITTEE.

Dr. R. G. Rows said that, during the last meetings of the Status Committee, evidence had been produced which showed that the haphazard way in which research was allowed to go on in this country rendered it difficult for many men to take up research, and hence the majority of those in the lunacy service paid little attention to the scientific questions of psychiatry, and rested satisfied with the ordinary routine of asylum work and life. It was felt that if this Association, the central organisation of the service, would take a more active interest in these matters, much valuable support would be obtained for the proposals contained in the Report of the Status Committee which would be considered to-morrow at the Annual Meeting of the Association. It must be remembered that, during the last few years, psychiatry had very much broadened its limits. In all branches of the subject, a host of workers had been engaged and new methods had been introduced; many obscure points had been elucidated, and fresh fields of investigation had been opened out. All this advance had led us deeper into this complicated subject, and the problems for research had become increasingly difficult. It was, therefore, not easy for a man who was isolated in an asylum to see in what direction he could profitably devote his energies. In anatomy and physiology, observers had got beyond hemispheres, lobes, and convolutions of the brain, and were investigating small areas and their functions. Chemistry was becoming more and more important, especially in connection with the values of the ductless glands. Further, in the domain of pathology, they had advanced beyond discussing chromatolysis, and degeneration of nerve structures, and hyaline degeneration of vessels, and they had now to consider the mechanisms by which these changes were produced. In the clinical field of psychiatry also, new methods had been introduced which promised to yield valuable results. And although some members of the Association might not approve of the lines on which that development was taking place, he thought it was their duty to see that these methods were not neglected. It was their duty to make use of them in examining patients in order that they might see to what extent they were of value, and whether some modification could be introduced which would allow of their being applied to the patients, in a form, perhaps, which would overcome the objections which had been raised.

There could be no doubt that, if a Committee of the Association were appointed, to which men in the service throughout the country could apply for advice and assistance, it would save those who had a desire to do some particular work a great deal of labour and much time. It was useless for several men to be occupied with the same subject independently, or perhaps going over ground which had been already traversed by other workers. It was difficult for men who were away from centres of teaching to get hold of the literature on the subject, and to learn what was being done elsewhere. The scientific journals were not within their reach, and, as a rule, any journal they wished to see must be provided out of their own pocket. There were many ways in which such a Central Committee could render the greatest assistance to the development of a keener scientific interest among members of the specialty. In the name of the Status Committee, he had to move "That a Standing Committee of the Association be formed, to be called 'The Research Committee,' to have as its object the encouragement and guidance of original work in psychiatry."

Dr. COLLINS said he had much pleasure in seconding it.

The PRESIDENT said he thought the resolution so convincingly presented by Dr. Rows was a most important one, and he was sure members would feel much obliged to him for his action in this matter.

Dr. BULLEN, in supporting, said he was very glad to hear Dr. Rows' remarks on the subject. Some such committee had been a long-felt want throughout the whole specialty: that there should be a centre to which workers could turn for instruction. In the South-Western Division of the Association, some effort was being made to accomplish something of the kind here advocated, under the title, "The Western Counties Research Laboratory Committee"; and if he could be allowed to explain the movement it might prove of interest. The desire was that all the south-western asylums should form a general committee, and get their lay committees to contribute a rate towards this laboratory of 6d. per patient; such funds being used for the establishment of a central laboratory in Bristol. Some meetings had been held, and the project started, and he had sent circulars to all the superintendents of south-western asylums. The pathologist was Dr. Scott Williamson, formerly of Wakefield Asylum, and he was to establish the Central Laboratory. Besides having the use of the University laboratories, he was to receive all materials for research, conduct Wassermann and other tests, and cytological counts. It was also intended that he should visit, at the request of different superintendents, various asylums, and assist in the starting of laboratories, and assist in schooling medical officers who wish to do pathological work, and be generally helpful in such work. He hoped there was nothing in that project which would conflict with the Council's scheme. He thought there would be no harm in mentioning what had been done, as it conformed with Dr. Rows' ideas.

Dr. McDOWALL said he understood that the discussion on the whole subject had been adjourned until next November.

The PRESIDENT said Dr. Bullen had to some extent digressed, but it was interesting to hear from him what was being done in the South-Western Division.

The resolution was carried.

Dr. Rows then moved: "That the Nominations Committee be asked to nominate ten members to form the first committee, and to report to the Council in November."

Dr. BOWER seconded, and it was carried.

#### REPRINTING OF BYE-LAWS.

Dr. COLLINS asked that the Bye-laws be reprinted, now that alterations had been approved. The stock had been exhausted.  
Agreed.

#### DATES OF THE QUARTERLY MEETINGS.

*Dates suggested:* Tuesday, November 24th, 1914; Thursday, February 18th, 1915; Tuesday, May 18th, 1915.

These were agreed to as above, but the President-Elect for the ensuing year had not yet been able to give a date for the Annual Meeting in July, 1915. The Secretary, however, would intimate it in good time.

Dr. BOWER asked whether the place of meeting in February had been fixed.  
Dr. COLLINS replied that it had not yet been fixed, but it might be held in the Birmingham district.

The date of the next Annual Meeting was not fixed.

#### ELECTION OF CANDIDATES AS ORDINARY MEMBERS.

The PRESIDENT nominated as scrutineers Dr. Stoddart and Dr. Beaton.

The following gentlemen were duly elected:

R. G. Macdonald Ladell, M.B., Ch.B.Vict., Shafton House, Holbeck, Leeds.  
(Proposed by Drs. J. E. Middlemiss, T. Stewart Adair, J. Ivison Russell.)

Roy M. Stewart, M.B., Ch.B.Edin., A.M.O. County Asylum, Prestwich. (Proposed by Drs. David Orr, Edwin Montgomery, M. A. Collins.)

Henry Brougham Leech, M.D., B.Ch.Dublin, Senior A.M.O., County Asylum, Hatton, Warwick. (Proposed by Drs. A. H. Miller, D. F. Rambaut, and M. A. Collins.)

#### OTHER BUSINESS.

The PRESIDENT intimated that the Hon. Sec. had received an invitation from the International Congress on Sex Problems, Berlin, asking for the attendance of members as delegates. It was agreed to leave to the new President the nomination of gentlemen as accredited delegates, and he hoped any who could go would inform Dr. Thomson.

Dr. THOMSON invited any members who wished to do so, to see portions of the old asylum. Bethel City Hospital was close to the City hotels, and the Superintendent, Dr. Rice and Mrs. Rice, would be pleased to see any members.

This concluded the business of the morning Session.

#### THE LUNCHEON.

Members were entertained at luncheon in the large hall of the Asylum. The Chair was occupied by Mr. County Alderman Robert King, J.P., and he was supported by Mr. A. G. Copeman, J.P., Chairman of the County Education Committee, Dr. Thomson, President-Elect of the Association, Mr. H. H. Goldsmith, Mr. Walter Hansel, Clerk to the Asylum Committee and to the Committee under the Mental Deficiency Bill, and Dr. James Chambers, President.

The CHAIRMAN said that that was not an occasion for speech-making, but he would submit one toast, namely, "The King." This was loyally honoured.

Dr. CHAMBERS quite concurred in the Chairman's view as to the making of formal speeches, but he was sure his fellow-members would wish him to express their warmest thanks to the Committee and to Dr. Thomson for the hospitable welcome that had been accorded to them. It was a signal honour to be the guests of those gentlemen, and the members of the Association had been intensely interested in visiting that time-honoured Institution, rich in traditions, and now managed by those who knew how to conserve what was best, and whose catholic outlook enabled them to adopt what had been proved to make for progress. One's thoughts naturally reverted to the history of that Institution in connection with the advances that had been made in the treatment of persons of unsound mind, and, taking a wider survey, to the part which the County of Norfolk had played in the life of the kingdom. Its history contained records of divines, lawyers, physicians, men of letters, artists, and merchant princes, of whom any county would be proud; and one recalled Macaulay's description of Norwich, in the seventeenth century, as the capital of a large and fruitful province, and that it then ranked with Bristol in standing next to the City of London in importance. Quite recently, in a study of British genius, contributed by Havelock Ellis, Norfolk and Suffolk were placed at the head of the English counties in a table which gave the value of these counties according to their relative production of men and women of marked intellectual ability. When one reflected on these facts, one could understand the attraction which that county and its people had for men like Dr. Thomson. He felt that Dr. Thomson was to be congratulated on having had the opportunity of carrying on his life-work there, and the Committee of that Institution and the Norwich community were equally to be congratulated in having him as one of their im-

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of this kind, and yet members did feel earnestly that the Association owed much to the President, Dr. Chambers, and to the other officers, for the large amount of work they had done. It was his misfortune that he was not able to hear last year's Presidential Address, but he had read and re-read it, and he regarded it as a model of what a presidential address should be. It was an inspiring address, clothed in beautiful language, and he believed those who were privileged to hear it would unite in praise of it as a model. That was the way in which Dr. Chambers began his duties as President, and throughout the year now ending his work had been uniformly good, equal to the address which he had just attempted to characterise. Members felt deeply grateful to the President for the kindly courtesy he had extended, and for the manner in which he had conducted the deliberations. He felt exceedingly sorry that Dr. Chambers also felt it necessary to give up the post he had held so long—that of a Co-Editor of the Journal. But, of course, a time must come when there ought to be a relief from duties which had been so willingly undertaken. With regard to the other officers he could say much, but he hesitated to do so. There was the Treasurer, whom they all loved and respected, and whom members had come to regard as the very embodiment of tact and good sense; they thanked him for the work he had done. The General Secretary, whose work was extraordinarily difficult, had been most diligent in carrying out that work, and keeping members correct in regard to business affairs, and who attended committee meetings with extraordinary regularity. He had not missed one meeting of the Status Committee to which he was appointed. With regard to the Registrar, he would speak to the exclusion of the Presidential Address if he were to deal fully with the merits of the Registrar and his work, but members would know of his great activities, especially in connection with the Nursing examinations; he believed Dr. Miller wrote every one of those certificates with his own hand, and they were beautifully done. He wished also, on behalf of the Association, to convey thanks to the other officers, whom it was, perhaps, unnecessary to name.

Dr. BOWER said the very pleasant duty had been committed into his hands of seconding the resolution, and it had been made very easy by the speech which Dr. Bedford Pierce had made. He wished only to add two remarks about the President. When Dr. Chambers was nominated for the office, somewhat more than a year ago, members of his, the speaker's, particular branch of the specialty, medical officers of private asylums, if they had been asked whom they would have liked to put in the Chair, as being most likely to maintain the dignity of the office, and to do credit to that particular branch, would have said James Chambers. And now, at the end of his year of office, they could well feel that their expectations had been realised.

The resolution was unanimously carried.

The PRESIDENT said he had the honour of expressing the appreciation of his brother officers and himself for the very kind vote of thanks which had been accorded to them, not because of any meritorious service on his part, but by virtue of the office he held. He would like to follow the example of his predecessors in the chair by gladly taking the opportunity of adding his testimony regarding the valuable work which the so-called permanent officials of the Association had accomplished during the past year. Before being elected President, he had the privilege of being in close touch with them over a somewhat prolonged period, and it was his knowledge of them and their work which encouraged and, indeed, decided him to accept the great honour which the Association had conferred on him. It was quite superfluous for him to say that the expectations he had formed regarding his colleagues' support had been fully realised. The Treasurer had displayed that masterly judgment which characterised his expressions of opinion, based on unrivalled knowledge of the Association's affairs; and his advice had the qualities of sympathy and definiteness which made it so acceptable. With regard to the Secretary and Registrar, he need only state that they had maintained the high standard of efficiency which they had set themselves in the performance of their exacting duties. He could not refer to the conduct of the Journal without saying how greatly he had enjoyed co-operating with his colleagues on the Editorial Staff, and how much he regretted parting from them. At the same time, he was happy in the knowledge that their close personal friendships would not be disturbed by any official severance. He knew that his former colleagues would wish him to say how highly they appreciated the Association's continued confidence in them.



During the past year much time and thought had been devoted to the affairs of the Association by the various committees. Those members who had been elected to watch the Mental Deficiency Bill—now an Act—had not had such an arduous time as in the previous year; their work had continued to be most valuable, and they were always ready to afford advice and assistance. He felt sure that all would wish special acknowledgment to be made of what had been accomplished by the chairman and secretary of the Status Committee. They had laid the Association under heavy obligations, and he would venture to express the opinion that their efforts had imposed upon members the responsibility of doing all they could to carry the campaign upon which they had entered to a successful issue. He felt very strongly, and he was sure his brother officers concurred, that it was a great honour to serve the Association; they were grateful for the thanks which had just been accorded to them. One other duty remained to him in his office as President, namely, to invite his successor to take the chair. It would, indeed, be a work of supererogation for him to attempt to recount his estimate of Dr. Thomson by way of introducing him to them. They all knew him to be a cultured and practical physician; a man who was endowed with those qualities of head and heart which were so valuable in dealing with problems of the kind which confronted the Association. All would agree that it was a source of great satisfaction that Dr. Thomson would preside over their deliberations during the coming year, when, as was well known, very important matters would come up for consideration. He wished him a very pleasant and fruitful year of office.

Dr. THOMSON then took the chair after Dr. CHAMBERS had invested him with the Presidential insignia.

The PRESIDENT (Dr. THOMSON) said members would probably hear quite enough of him before the day was ended, so he would not now occupy time by making a set speech. But he must, in one sentence, acknowledge the honour which the Association had conferred upon him. He realised the responsibilities, and he would do his best to maintain the dignity and honour of their beloved Association.

#### PRESENTATION OF PRIZES.

The PRESIDENT said his first duty was to present certain of the Association's prizes. The Bronze Medal awarded for an Essay had been gained by Dr. Wootton, of Cane Hill Asylum, and he was glad to say the winner was a medical officer at his own old asylum. Dr. Eager and Dr. Macphail had been awarded the Divisional Prizes of the Association. The Gaskell Prize, the Blue Riband of the Association, had not been awarded.

#### PRESIDENTIAL ADDRESS.

The PRESIDENT then delivered his address, entitled "The Progress of Psychiatry during the past Hundred Years, together with an Account of the History of Norfolk County Asylum during the same period" (see p. 541).

Dr. McDOWALL said the honour had been conferred on him of being asked to propose this vote of thanks to the President for his very interesting address. He was sure those present were satisfied, from his performance of that task, that he had provided a guarantee of how admirably he would perform his Presidential duties during the coming year. It was an unwritten rule in the Association that the President's address should not be criticised. They could, therefore, only thank him. However, he might be allowed to say, in very few words, how much he had been gratified by Dr. Thomson's very acute review of the problems which confronted the specialty during the next few years. There could be no doubt of the fact that our present views as to the causation and treatment of mental diseases must be taken very seriously in hand, otherwise its practitioners would deserve the condemnations passed upon them in regard to the backward state of the specialty. Probably every man in the room was aware that the proportion of recovered cases in public asylums had not appreciably increased in the past hundred years—a state of things which was not satisfactory and could not be allowed to continue. Therefore it was a great gratification to him to have heard the President's remarks about the absolute necessity of introducing modern methods of research into their clinical work, and trying to unite their work with the teaching and practice in the medical schools. In this direction he felt

perfectly certain—and he was in cordial agreement with the President on the point—that the way of progress lay. And, as members well knew, there were many agencies working in the same direction, and one could feel certain that the various committees and activities of the Association would receive admirable guidance from the President during the coming year. He proposed that the cordial and hearty thanks of the Association be accorded to the President for his exceedingly interesting and suggestive address.

Dr. MACDONALD said he had been honoured by being asked to second the vote of thanks to the President. It was a happy fact that the self-constituted jury which the President set up for himself in this matter did not disagree, otherwise he might not have produced this most able historical review of the past hundred years. All must have felt, as the President went along, one step after another, what an interest it must have been to the President to hunt up all this most important and interesting information. His view was that in the years to come this address would rank as among the most admirable with those of Bucknill and Hack Tuke.

The vote was carried by acclamation.

#### PAPER.

"INTRATHECAL TREATMENT OF GENERAL PARALYSIS." By E. MAPOTHER, F.R.C.S., and T. BEATON, M.B., B.S. (See p. 591.)

The PRESIDENT explained that owing to the lapse of time during the reading of his address, the authors of this paper had agreed that it be taken as read, and he was sure members would look forward with interest to reading it in the Journal.

#### GARDEN PARTY.

Dr. and Mrs. Thomson were "At Home" at 4.30 p.m. to the members and their lady friends, in the gardens attached to the Medical Superintendent's residence; the beautiful weather, the profusion of roses in their seasonal best, and the band of the 12th Lancers adding greatly to the enjoyment of the afternoon.

#### THE DINNER.

The Annual Dinner was held at the Maid's Head Hotel, on Tuesday evening, the President occupying the Chair. Among those present were the Lord Mayor of Norwich (Mr. Porter), the Lord Bishop of Norwich (Dr. Pollock), Mr. Alderman Robert King, J.P. (Chairman of the Asylum and Mental Deficiency Committee), Mr. Walter Hansel (Clerk to the same body), Dr. Gardiner Hill, Dr. Keay (President-elect), Dr. Seymour Tuke, Dr. Hayes Newington, Dr. Chambers, Dr. MacDonald, Dr. McDowall, Dr. Stansfield, Dr. M. Abdy Collins, Dr. Bedford Pierce, Dr. Drapes, Dr. Bower.

#### TOASTS.

"The King," "The Queen, Queen Alexandra, the Prince of Wales and the other Members of the Royal Family," were proposed by the PRESIDENT in loyal phrases, and heartily pledged.

#### "THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND."

The BISHOP OF NORWICH, in proposing this toast, said he found himself in a very proud and elated position, not only because he was sitting between the President for this year and the President for next year, but because, though he probably knew less about the Association and its work than anybody in the room, he had been selected to submit the toast for acceptance. He was so much flattered by it that he had been almost betrayed into the paths of egotistic self-complacency. But there was a warning in front of him. Years ago, a neighbouring institution to one over which he had the honour of presiding, was Broadmoor Criminal Lunatic Asylum, and there he frequently paid visits to Dr. Nicholson, his good friend

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linked arms together, and there was no jealousy between those who discovered and those who used. In these discussions, members hammered out a spark to give a fresh light for the future of the profession, and the treatment of the afflicted people among whom they were called upon to labour. And, if he might speak for himself, he always felt that there was a peculiarly close affinity between the work which these members in their special branch of this great profession did, and the work which the clergy set out to do. He thought there were many cases in which a man or woman might, with equal propriety and prudence, in an early stage, consult a competent clergyman or a competent doctor. In some cases, at any rate, he could see the havoc which might be brought to many homes, and might have been stopped if earlier the patient had been asked to see a doctor, who would have explained to him or her that the cause of the distress so gravely felt was largely a physical cause, and one which the doctor could treat, at least as well as the clergyman. In that way he regarded the work of the clergyman and that of the doctor as almost overlapping; and he felt sure that any success which members of the Association, through their deliberations, arrived at would certainly react upon those whom they of the clergy might call their patients, and that each success would furnish another cause of deep and lasting gratitude for the splendid work they were accomplishing. And, if he might say so, he could not forget Who was, and Who is, their example, Who certainly had set an example to the doctors, who, as they went about doing their blessed work, were treading in the footsteps of Him Who certainly never neglected the physical symptoms of those whom He helped, and Who had attached some of His most wonderful teaching to the medical work—if he might so phrase it—which He did. It was a grand thing to know that the doctors were now on the look out to prevent the earliest stages of those dreadful catastrophes which all had to lament. And they would indeed be thankful to God if their deliberations in Norwich were to carry them a stage further in their efforts to learn the best way of tackling these conditions in their initial stages, before they had brought disaster to the unfortunate patient, a disaster which spelt the ruin of the home and the breaking up of its tender associations. He had great pleasure in giving them the toast of the Medico-Psychological Association of Great Britain and Ireland. He was so glad that Ireland was united with Great Britain in this matter. On opening one's daily paper one constantly read of causes of disruption between Great Britain and Ireland, but in this toast they were united. He coupled with the toast the name of the President, Dr. Thomson. (Applause.)

The PRESIDENT (Dr. Thomson), in reply, desired, in a few halting words, to thank their revered Bishop for his very noble and kind words. His Lordship very truly invited comparison between the work of the clergy and the work of the doctor. The company felt highly delighted and honoured at having the Bishop present, restored in a large measure to his health and usefulness in this ancient City. Dr. Pollock showed no kind of jealousy or annoyance that doctors had rather poached on the realm of work of the clergy in their practice of the healing art. All would remember, from their reading of history, that the clergy were the pioneers, and the great workers among the sick and feeble from our Lord's time onwards; and in these days of specialism the doctor had gradually usurped a great deal of the work which they did so well and so disinterestedly in the old days. It was delightful to know that the clergy bore the doctors no grudge for this, but that, on the contrary, they welcomed the medical man as a helper in the great realm of attempting to do good in the physical and mental lives of our fellow creatures. The work which the members of the specialty did was very apt to be carried on behind closed doors and high walls, but the results of their work were beginning to leak through those walls; in fact, as the years had gone on the walls had been knocked down, and an endeavour was being made to let the light of their work shine forth a little more. And he thought there were hopeful symptoms when even the Government of His Majesty was at the present moment alive to the importance and necessity of the alienist's work, because, for the first time in history, public money had been allocated to the extremely vital and important work of research, in the direction of discovering the cause, and, if possible, preventing the scourge of mental defect. He was sure that was the last object for which the taxpayer would grudge a fraction of a penny in the pound. More than that, they were receiving public recognition and sympathy in their work. The recent Report of the Royal Commission on the Feeble-minded

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to give any views he might hold on the subject. But he thanked the company for the very kind way in which they had received the toast. He assured them that Norwich appreciated the visits of such bodies as this, and it was no empty expression when he said Norwich warmly welcomed them.

“THE GUESTS.”

Dr. BEDFORD PIERCE, in proposing this toast, said it was one of the pleasurable functions of this annual dinner that they were able to ask guests to join them, and to get words of encouragement, such as had been heard this evening from the Bishop of Norwich. He felt himself at a considerable disadvantage in proposing this toast, as it had not been his pleasure to meet any of the guests before; and as he knew very little of them it was almost impossible for him to do justice to the occasion. Coming, as he did, from the Metropolis of the North, the second City of the Kingdom, to this capital of East Anglia, he naturally kept his eyes open, and compared the two Cities, and the comparison had been one of extreme interest to him. But he had not seen any city walls round Norwich (“Oh”); at any rate, one would not get into York without seeing its city walls. But one thing he noticed which was very remarkable to him, namely, the number of gardens and beautiful houses, with flowers on every side; they were seen round the cathedral and in every part of the City. Without any legal town-planning scheme, the City Fathers in the past had preserved many of the beauties of Norwich, which the inhabitants could still enjoy. It seemed to him that the Lord Mayor, one of the guests whose health he was proposing, had inherited a goodly heritage, one which was beautiful in these days; and why Englishmen should go to foreign cities when there were such beautiful home cities as Norwich to be seen, he did not know. The next guest he had to mention was the Bishop. It seemed scarcely suitable that he, Dr. Pierce, a Quaker and a teetotaler, should be asked to propose the health of a bishop, when most of the company were drinking something stronger than Apollinaris. There seemed to be some inconsistency in it, but the head of the Church had authorised toasts to be drunk in water. He had received from a bishop of the Northern Province a great deal of personal kindness. He would like to mention one matter which showed a kindness towards the insane, and that was, he thought, exceptional. Year after year the late Bishop of Hull—who was also a Residentiary Canon—invited selected parties of patients from three Asylums to the residence, in order to give them a pleasant afternoon’s entertainment. This gave a great deal of pleasure, and the kindness was greatly appreciated. And, in addition, the Bishop regularly visited all the institutions in York—and there were several of them—for the care of the insane. He did not remember any visitor who displayed so much tact and sound judgment in visiting and conversing with the patients. Another of the guests whom he desired to mention was Mr. Robert King, Chairman of the Asylum Committee and the Mental Deficiency Committee. Members had seen some of the wonderful work which was going forward at Thorpe Asylum. There was no need for him to say much on the subject, except that it was surely a thing to be proud of that there were such gentlemen as Mr. King, who devoted their time and energies to this work of supervising and directing the management of such an institution as that. There was no £400 a year behind it; the work was done for the love of the cause. We, as a nation, could be very proud of the fact that there were, all over the country, such gentlemen as Mr. King, who devoted their time, energy, and strength to the welfare of the sick and the insane. There was also Mr. Heslop, County Surveyor; Dr. Nash and Dr. Starling; also Dr. McClintock, and also other guests, whose names he did not know, but whom he would wish to associate with the toast. He ought to say more in order to do justice to the toast, but he would tell one more story, which would show why the company should not hear him at greater length. He was trying to ascertain the state of mind of a gentleman under his care who was subject to hallucinations of hearing; he said he heard “voices.” He, Dr. Pierce, knew he thought he heard the voice of the Almighty directing him in his affairs, and he wished to know whether the patient heard other “voices” also. Those in the specialty knew it was very difficult to elicit the exact words which the person said he heard. He pressed this gentlemen, and at last he said—“Dr. Pierce, I do hear other voices;

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to administer it. He had pondered and dreamed about it, and the more he did so the more difficult it seemed. But they were not going to be depressed about it, because it was one's duty to tackle the subject, and they in Norfolk would do their best, and this Act was probably only touching the fringe of the subject. It was only fair to those who had to administer the law that that Law should be very clearly specified. They were going to take time over the matter. In dealing with this initial stage, he trusted they would do so efficiently, and hope for better things to come. He had been much touched by what Dr. Bedford Pierce said about their beloved City. The reason the walls did not exist now was that they were pulled down one hundred years ago, under the idea that that act was an improvement. He also thanked him for what he said about the gardens of the City. He was specially interested in that because he was associated with the Playing Fields and Open Spaces Society, which was started twenty-two years ago, and had worked hand in hand with the Corporation. Norwich had been called "The City of Gardens," and it was nice to hear praise from a gentleman hailing from a city of which he was very fond, York, where also his greatest friend lived. When this improvement of the City was taken in hand, those who set about it were called mad, but they had a great Mayor and a very enlightened Corporation. He had listened to Dr. Thomson with reverence, and he was glad the Association had so honoured him, for he, the speaker, was proud to sit at his feet.

"THE PRESIDENT."

Dr. DRAPES, in submitting the toast of "The President," said that, in casting about for a reason as to why he, an Irishman, should have been given the honour of proposing this toast, he came to the conclusion that it was meant as a congratulatory compliment on the fact that the Twelfth of July had passed without any serious hubbub in Ireland; and he hoped that this would not be the last time that his country would be allowed to share in the proceedings of an evening like this as an integral part of the United Kingdom. He wished the toast had been entrusted to abler hands, for the gathering included men who knew Dr. Thomson better than he did. In the Presidential Address which Dr. Thomson delivered that afternoon, the author seemed bent upon disparaging himself; but members of the Association absolutely refused to accept Dr. Thomson at his own price. The Association had conferred upon that gentleman the highest honour it was in its power to bestow, and he richly deserved it. The work which tells is the steady, indefatigable, unwearied labour, which members knew Dr. Thomson did ever since the commencement of his career. Those who went through Thorpe Asylum that day saw the fruits of Dr. Thomson's many years' work there. Now that they had had the opportunity of coming into closer and more intimate relations with him, they found him to be a kind and genial host and friend. If they were in Ireland—he fancied he heard them saying, "Thank God, we're not"—he knew how they would greet him. They would give him what in the silvery vernacular of his native country was called a "*Cead mille Failthe*," which, being interpreted into their more barbarous Saxon meant "A hundred thousand welcomes."

The toast was enthusiastically received.

Dr. THOMSON thanked the company heartily for their kindness.

During the evening the "Apollo Quartette" tastefully rendered a number of glees and songs.

MORNING SESSION, WEDNESDAY, JULY 15TH.

Held at the Guildhall, Norwich. Dr. THOMSON, President, in the Chair.

PAPERS:

Dr. GETTINGS read a joint paper on the "Detection of a Dysentery Carrier" by himself and Ethel Waldron, M.B., Ch.B., D.P.M. (see p. 605).

It was discussed by the PRESIDENT, Drs. MENZIES, KAYE, and COLLINS, and Dr. GETTINGS replied.

Dr. A. W. DANIEL read a paper on "The Use of Scopolamine Hydrobromide or Hyoscine in the Treatment of Mental Disorders" (see p. 610).

It was discussed by the PRESIDENT, Drs. BOWER, GILMOUR, EDWARDS, and DRAPES. Dr. DANIEL replied.

#### AFTERNOON SESSION, WEDNESDAY, JULY 15TH.

##### REPORT OF THE COMMITTEE *re* STATUS OF BRITISH PSYCHIATRY AND OF MEDICAL OFFICERS.

###### INTRODUCTION.

The Committee of the Medico-Psychological Association, appointed on November 20th, 1911, to consider the "Status of Psychiatry as a profession in Great Britain and Ireland, and the reform necessary in the education and conditions of service of Assistant Medical Officers," and reappointed at the Annual Meeting of the Association held in London in July, 1913, at which an Interim Report was presented and adopted, begs now to submit its Report.

During the past year, the duty of the Committee has been to consider what means could be devised to remedy the grave defects in the present position of psychiatry in Great Britain and Ireland, as set forth in the Interim Report of 1913.

In this Report the defects were divided into three groups:

- (1) Absence of proper provision for the early treatment of incipient and undeveloped cases of mental disorder.
- (2) Few facilities for the study of psychiatry and for research.
- (3) The unsatisfactory position of assistant medical officers in respect of professional status, the prospects of a career, and the conditions of the asylum service.

During its deliberations, the Committee has had the advantage of considering special reports and memoranda, dealing with different branches of the subject, prepared by individual members. A paper was read by Dr. Rows on "Clinics and Centres for Teaching." The conclusions and recommendations of this paper were adopted, and form one of the appendices. The paper itself is circulated with the Report.

The titles of the appendices are as follows:

- (1) Conclusions from Dr. Rows' paper, "Clinics and Centres for Teaching."
- (2) Notes on post-graduate study.
- (3) The disabilities of assistant medical officers in asylums as regards the medical work.
- (4) The restricted social conditions.
- (5) The salaries of medical officers.
- (6) The appointment of medical superintendents, and assistant medical officers.

These memoranda deal with practically the whole of the defects mentioned in the Interim Report. The Committee has recognised throughout the necessity for providing treatment for incipient cases of mental disorder, and adequate facilities for teaching psychiatry, and for research therein. It has been felt that advances in these directions will do much to remedy the defects of the present system. Reference to the appendices at the end of the Report will show how closely all these defects are related to one another, and how necessary it is to adopt comprehensive methods in devising remedies.

The fact that, even under the present conditions of delayed treatment, about 33 *per cent.* of those admitted to the asylums of England and Wales are discharged recovered, demonstrates that the feelings of helplessness and hopelessness, with which such illnesses are usually regarded, are by no means justified. The evidence of the many authorities, who have had practical experience of the value of treatment during the incipient stages of the illness, is conclusive that the exercise of scientific care during the early phases of the mental disorder would save many from such a complete breakdown as would necessitate certification and removal to an

asylum. In all other branches of medicine, facilities for dealing with disease in its initial stages are recognised as indispensable, and, therefore, the Committee regards it as essential that, in the large centres of population at any rate, means should be provided to obviate the delay which now exists in securing adequate treatment for mental disorders. It is, therefore, recommended that psychiatric clinics should be established.

Although in the first instance the equipment of these clinics would be costly, the Committee is of the opinion that the expenditure involved would prove to be true economy, as the results to be anticipated are the frequent arrest of mental disorder in its incipient stage, and the accumulation of knowledge which will more effectively guide treatment and, it may be, lead to the adoption of preventive measures.

The success of preventive medicine also depends on the development of research in order that the causes of the disease may be more thoroughly understood, and fresh methods and means of treatment may be discovered. Recent advances in the knowledge of psychiatry justify the hope that further efforts will be rewarded by the discovery of more successful methods of combating diseases of the mind. This will demand prolonged investigations, and a well-organised scheme of research, carried on simultaneously in all branches of the subject, so that the results obtained by each investigator will be at the disposal of his fellow investigators and finally be correlated. Investigation in the field of psychiatry is so complex that its difficulties may well seem insurmountable to the medical officer who, having had no opportunity of obtaining a sound preliminary training, finds himself domiciled far from a centre of research where he might gain advice, and occasionally go for a period to acquaint himself with new methods, and recent advances in knowledge. The advantage of working in a scientific atmosphere in an institution where he could see treatment on the most modern lines, where he could be assisted and guided by men who have done and continue to do their share in investigating the still obscure questions connected with this science, and where he could make use of the facilities for attending courses of instruction in special branches of the subject, will be obvious to all. Such opportunity is not now available. The result is that in many asylums no organised research work is carried on, and clinical and pathological investigations are often ill-directed, haphazard, and consequently fruitless. The establishment of clinics would go far to remedy this. They would be the training schools for men who would carry into asylums scientific knowledge, and enthusiasm for the investigation of the many problems which mental diseases present. A higher standard of professional attainment would prevail amongst medical officers in asylums, and this would give added force to the claim which is made in this report for the amelioration of those hardships and disabilities from which they suffer, to the detriment of themselves and their patients.

Amongst these disabilities may be mentioned the somewhat anomalous social position, the celibate life, the lack of independence and responsibility, and the inadequate financial conditions, which render the service unattractive, so that few of the most capable men seek a career within it. In other branches of medical service in which a higher standard of professional attainment has been insisted on, and the civil and social conditions of life have been improved at the same time, the lack of suitable candidates for vacant posts is not experienced to the same extent as in the lunacy service. Men are willing to devote time to post-graduate training in order to qualify themselves for the higher standard demanded when they see a reasonable prospect of reaping a fair reward. The Committee notices with regret that the public asylums are constantly growing in size, and the number of assistant medical officers is increasing, without any increase in the number of posts which carry with them the dignity of position, the responsibility and the adequate remuneration such as would lead to the full development and exercise of the highest powers of those who enter the service. Were the position of assistant medical officers improved, so that they might obtain relief from the routine and associations of asylum life, and were they, after a period of probation, permitted to have houses of their own and to marry, many of the difficulties would be removed.

The findings of the Interim Report as to the defects in our existing system of lunacy administration, and the proposals now submitted to remedy these defects, are set forth below in parallel columns.



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accorded to the boarder to terminate residence on so short a notice as 24 hours.

intendent, without a preliminary reference to a Poor-Law authority, and also that the use of Urgency Orders be widened, so as to include patients unable to pay for their own maintenance.

It is recommended that powers similar to those contained in the 1905 Lunacy Bill, providing for the treatment of incipient cases for a limited period, without certificates, be obtained, so as to provide for the reception of "notified" persons into public asylums, registered hospitals, and licensed houses, in addition to homes approved by the Board of Control.

(See Dr. Rows' paper on "Clinics and Centres for Teaching," and Appendix 1; and also Appendix 3, and Appendix 7.)

## PART II.

### DEFECTS.

#### THE FEW FACILITIES AVAILABLE FOR THE STUDY OF PSYCHIATRY AND FOR RESEARCH.

Psychiatry as a branch of medicine is in a decidedly inferior position to practically every other branch in the lack of educational facilities, and in the absence of any career for those who desire to undertake scientific work in it.

Few centres for the organised teaching of Psychiatry exist. The equipment of many of these leaves much to be desired. The number of post-graduate students is few, as there is little inducement given (*vide infra*).

This is the more serious because the attention given to mental diseases before qualification is much less than that given in many other countries.

Owing to the absence of clinics the medical student has no opportunity of observing borderland or undeveloped cases.

Few asylums possess laboratories properly equipped and staffed. Some that exist are without direct relation to centres of medical education, and are not easily accessible to students.

In England, the co-operation of neighbouring asylums for the purpose of establishing laboratories is beset with insuperable difficulties.

Research is dependent upon the enthusiasm of individual workers, who receive little inducement or reward for their labours.

### SUGGESTED REMEDIES.

#### IMPROVED FACILITIES FOR STUDY.

The proposed remedy for this defect is the establishment of clinics and centres for teaching, in which systematic instruction would be provided for men who decide to enter the lunacy service, and where, too, those already in the lunacy service might go for post-graduate instruction in the most approved methods of investigation and treatment of mental disorders. It is considered essential that facilities for post-graduate study should be afforded to men who are engaged in asylum work, and it is therefore recommended that there should be granted to Asylum Medical Officers suitable periods of leave of absence from their ordinary duties for the purpose of such study at recognised clinics. Also that an interchange between the assistants at the clinics and those on asylum staffs be encouraged and that the time spent at the clinic should count as time in the service from the point of view of superannuation.

A system of training which will produce a body of educated and enthusiastic psychiatrists will call for the provision of better means than now exist in some asylums for clinical investigation of mental disorders. The Committee also recommends that properly equipped and staffed labora-

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has but little autonomy and independence.

There are very few well-paid appointments available for those who are specially qualified to carry on scientific investigation and research, and Local Authorities are seldom in a position, if they have the desire, to find the money required for carrying on this all-important but very expensive branch of the work.

(3) *The restricted social conditions.*

Celibacy is enforced either directly or indirectly upon the great majority of Medical Officers. In many cases marriage is directly forbidden, in others it is rendered impossible because the salary is inadequate for a married professional man.

In the smaller English asylums, where the average age of the Senior A.M.O. is 36.6, and the average length of service 9.5 years, only 18 per cent. are married. In the large asylums with more than two A.M.O.'s where the average age of the Senior A.M.O. is 38.3, and the average length of service 11.8 years, 51 per cent. are married. But in these latter institutions the Second A.M.O., whose average age is 35, and length of service 6 years, is married in only one instance. In Scotland, according to the information furnished by the circulars, not a single A.M.O. is married, although the Scotch Superintendents have served on an average 10 years before receiving their appointments.

The returns from Ireland are more favourable, and show that 53 per cent. of the Senior A.M.O.'s are married. The returns on which these figures are based were collected in 1912.

Medical Officers are generally compelled to live in the institution, and their personal liberty is curtailed to an extent which is sometimes needless and arbitrary.

(4) *The tendency of routine to kill enthusiasm and destroy medical interests.*

The promotion or advancement of a Medical Officer depends so little upon his knowledge of Psychiatry that he has no inducement for that reason to devote himself to an earnest study of the subject. His work is apt to begin and end with the discharge of essential routine duties to

increased, while the number of Medical Superintendents has not grown in proportion, it is necessary, at any rate in the larger asylums, that the status of the Senior Assistant Medical Officer be improved; and that he be placed in a financial and social position comparable to that open to men of equal standing in other branches of the profession.

Moreover it may be pointed out that the establishment of psychiatric clinics and joint laboratories, as already described, will create posts attractive to men possessing special scientific qualifications. (See Appendix 1, Appendix 5, and Appendix 7.)

(3) *Social conditions.*

It is recommended that an Assistant Medical Officer should be in a position to marry after five years service, including the probationary period, and that even if he be unmarried facilities should be given him to live in a house of his own in the grounds of the asylum, or beyond them if necessary.

Although since the Interim Report was published salaries of Asylum Medical Officers have been raised considerably in many areas, it is recommended that the attention of local authorities should be drawn to the fact that in many cases, and especially in the smaller institutions, the remuneration of the Senior Assistant Medical Officers is not proportionate to the responsibilities of their position. It must not be forgotten that, in many such cases, the duration of service is long and the prospect of promotion small.

Reference to the conditions of service in respect to the curtailment of personal liberty is made in Appendix No. 4. (See also Appendix 5.)

(4) *Medical interests.*

The suggestions offered to remedy this defect are that Junior Assistant Medical Officers, in addition to doing statutory routine work, should have the opportunity given to them and the duty laid upon them of co-operating with the Senior Officers in the clinical work of the asylum, more especially in the investigation and treatment of recent cases, and in consultations and discussions on doubtful and interesting cases generally.

Where opportunity offers, the Senior

the exclusion of careful clinical and scientific investigation.

The work assigned to Junior Medical Officers is in the majority of cases monotonous, uninteresting, and without adequate responsibility. For those whose personal enthusiasm keeps alive in them the desire to extend their knowledge such opportunities as that of study-leave are rarely afforded them. The existing system therefore leads to the stunting of ambition and a gradual loss of interest in scientific medicine. It tends therefore to produce a deteriorating effect upon those who remain long in the service.

Assistant Medical Officers should be permitted and encouraged to place their services at the disposal of teaching bodies as lecturers and demonstrators.

A closer intercourse between Asylums, Hospitals, and Medical Societies is desirable in order that the medical men in the asylum may keep in touch with general scientific progress, and also that the medical profession generally may have increased opportunities of obtaining a practical knowledge of psychological medicine.

A further suggestion offered in this connection is that study-leave should be granted, from time to time, to Assistant Medical Officers, and that an interchange between the doctors of the clinic and of the asylum be encouraged. (See Appendix 1, Appendix 2, and Appendix 3.)

In the preceding paragraphs, the status of psychiatry and the status of assistant medical officers have been chiefly dealt with. It has been suggested, primarily in the interest of patients, that they should be given ready access to treatment at clinics and in other institutions in the early stage of their illness. The necessity for junior medical officers showing enthusiasm and capacity for their work before they can be confirmed in their appointments has been insisted upon. Proposals have been offered as to the sort of provision which should be made to facilitate the study of psychiatry both at special centres and in the asylums to which the assistant medical officers are attached. It has been urged that for those showing special aptitude for research work, new and suitably remunerated posts should be available, and that for those engaged in the clinical and general asylum work there should be financial recompense commensurate with their knowledge and experience, and comparable with that of colleagues of similar standing in general practice. It has been further suggested that certain restrictions on personal liberty which are generally, but not universally, prevalent, should be so far relaxed as to enable a man after a reasonable number of years of service to have a home life as distinguished from a purely institutional one.

In the course of these investigations the Committee has heard of complaints and grievances which spring from personal faults, and personal incompatibilities; for the correction of these no immediate remedy appears to be available. In Appendix 6 on the appointment of medical superintendents, stress has been laid upon the qualifications and qualities which, in the opinion of the Committee, should be deemed essential in candidates for that position. The superintendent above others is potent to make or to mar the success of the institution over which he presides. In some instances the unsuitable man as superintendent is the real origin of discontent amongst assistant medical officers, and in other cases there are assistant medical officers whose incompetence and lack of interest in their work create a substantial grievance for those who associated with them. The remedy for this in either case is to devise a system of selection for promotion which will eliminate the unfit early in their asylum service.

The Committee has considered how far the suggestions which have been made can be given effect to under the existing Lunacy Law and the existing system of asylum management.

The Lunacy Law does not permit of the establishment of clinics on the lines which have been recommended, nor does it provide for the admission of uncertified cases to the public asylums. This for the present, at any rate, renders nugatory the suggested schemes for affording treatment for the incipient and non-confirmed cases of mental disorder, and with that, to a large extent, fail the opportunities for study on which stress has been laid for adding to the knowledge and increasing the efficiency of asylum medical officers.



Another suggestion, namely, that neighbouring authorities should combine to establish and maintain central laboratories, is also one to which effect cannot be given under the existing law. It therefore comes about that the proposal that remunerative positions should be available for research-workers at clinics and in laboratories cannot, in the meantime, be materialised.

The management of asylums is now in the hands of a large number of independent authorities. They are not only not inspired by a common ideal of the requirements of these institutions from a medical standpoint, but they are limited in action by the financial resources upon which they can draw. Nearly all of the proposals suggested presuppose the necessity for increased expenditure. In some districts no doubt the cost could and would be readily met, but in other areas poverty would be pleaded as a real or plausible excuse for not instituting reforms which necessitate the incurring of increased financial obligations. While a method might be devised for bringing the suggestions before the various asylum committees in the country, and while even acquiescence in them might be obtained—as far as they are within the competency of these Committees—there is lacking, under our present system of asylum management, authority to ensure a practical compliance with them. No central authority exists which could, on the one hand, claim from local bodies a standard of requirement in the equipment and management of asylums, and in the qualification of medical officers, or which on the other hand, could give local bodies the guidance and information which can be obtained only from those who possess extensive knowledge of the men engaged in, and of the best methods employed in, the whole range of the practice of psychiatry. It would seem then that the equipment of laboratories, study-leave, promotion on ascertained merit, increase in emoluments, liberty to marry, and other benefits, will continue to be dependent on the enlightenment and favour of individual committees until a change in the system of asylum government is effected.

There remain those suggestions which concern the internal administration of asylums, a field in which the medical superintendent ought always to be paramount. It is, therefore, to members of our own body that we must address such suggestions as that the medical work of the asylum should be so arranged that the junior medical officers should be permitted and encouraged to participate in all the medical interests of the institution.

Inquiries have shown that the work of the junior officers is often monotonous, uninteresting, and without adequate responsibility, and that this leads to the stunting of ambition, and to the gradual loss of interest in scientific medicine. It has been made clear to the Committee that much of the happiness and enthusiasm and usefulness of an asylum medical staff depends on the existence amongst them of opportunities and desire for consultation and co-operation in their work, and the pleasant experience of not a few asylums proclaims this truth.

Consideration has been given to various methods for giving effect to the proposals contained in this Report, and we recommend:

- (1) That a conference of persons and representatives of authorities interested and concerned in psychiatry and asylum management be convened.
- (2) That the findings, suggestions, and proposals embodied in the Interim Report and in this Report be submitted to the Conference with the object of:
  - (a) Obtaining voluntary co-operation in carrying out such of the proposals for reform as can be so achieved;
  - (b) Securing the assent and support of the Conference to proposals for alterations in the Lunacy Laws which will make practicable other reforms which are now unattainable.

Signed on behalf of the Committee,

BEDFORD PIERCE, *Chairman.*  
R. G. ROWS, *Hon. Secretary.*

July 1st, 1914.

#### CLINICS AND CENTRES FOR TEACHING.

By R. G. ROWS, M.D.

The Interim Report of the Status Committee, published in July last, marked the end of the first stage in the effort which is being made to improve the lunacy

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hospitals, which, besides providing for the treatment of mental disorders, offer facilities for teaching and research, has only recently been recognised. An important part of the practical responsibility of psychiatry is social work and social adjustment. Prof. Meyer suggested that, in connection with a medical school, there should be a psychiatric clinic, with an adequate out-patient department, and a sufficient number of ward divisions to allow incompatible types of cases to be kept apart; that facilities for the care of convalescents, and for those requiring prolonged habit-training must be provided; and, finally, that suitable arrangements for the well-being of the chronic cases must be made. In his report he showed how the Henry Phipps psychiatric clinic provides a basis for the treatment of mental disorders, for teaching and research. It maintains, in the first place, an out-patient department, with a social service which collaborates with other agencies in the investigation and study of definite districts. In the second place there is a hospital with five subdivisions for each sex, an admission ward, a division for excited cases, one for the semi-quiet, one for the quiet and one for the special cases; there is also a ward for private cases. The medical staff of this hospital, consisting of a director, an assistant director, a resident physician, two assistant residents, and five internes, is supplemented by the heads of three special research laboratories. These include: (1) A department for the study of the diseases of the internal organs, practically a department of internal medicine provided with laboratories for clinical methods and bio-chemical work; (2) a department devoted to the investigation of the functional and anatomical disorders of the nervous system; (3) a special psychological department for promoting and standardising psycho-pathological investigations. Further, he insisted on the necessity for teaching the medical profession and the public that many mental disorders are absolutely recoverable, that good hospital and scientific treatment save many, that the mere economy of our monster institutions represents a sham economy paid for by the patients and their families, and that psychiatry must extend beyond the asylums.

Prof. Sommer, in his report, demonstrated that a psychiatric clinic should fulfil numerous functions. Besides providing a hospital for the care and cure of those suffering from mental illness, it should be a centre for scientific education and research, and for the development of prophylactic measures. He advocated the inclusion of a section for neurological cases in order that a comparative investigation of normal, neurological, and insane subjects by modern methods of experimental psychology, as well as by the usual empirical psychology, might be rendered possible. Further, he drew attention to the important difference between an asylum and a psychiatric clinic, in that the latter stands in much closer relationship to allied fields of study, to the science of pedagogy, to forensic psychiatry and criminal psychology, to conditions of mental deficiency, and to public health. The application of psycho-pathological methods of investigation to all these branches of study would yield valuable results.

The most striking feature of the reports of these two authorities is the hopefulness displayed in regard to the subject of the treatment of mental disorders. In place of the pessimism and helplessness by which many people in this country seem to be paralysed so that they have little idea of doing anything beyond providing well-appointed refuges for the insane, we find recognition of the fact that many cases of mental illness are absolutely recoverable, and that by modern scientific methods much may be done for the sufferers without their undergoing the painful experience of certification and segregation in an asylum. That this can be appreciated by the general public is demonstrated by the number of people who make use of the opportunities when they are offered to them. To the clinic at Giessen with its seventy beds, between 300 and 400 patients were admitted in 1907. From the report of the clinic at Munich for the years 1906-7 we learn that there were 1,600 admissions in 1905 (the first complete year after it was opened), 1,832 admissions in 1906, and 1,914 admissions in 1907. At the present time admissions go on at the rate of ten or twelve per day. At Munich the clinic is open night and day for the reception of patients, so that they can be brought under the care of an expert at the earliest possible moment, and the painful impressions produced often by detention and restraint by unskilled persons and in unsuitable surroundings are reduced to a minimum. Treatment of such large numbers will, of course, necessitate the employment of a large medical and nursing staff. At Giessen, with 70

beds and between 300 and 400 admissions a year, there are five medical officers, including the director. At Munich, with 120 beds and 3,000 or 4,000 admissions, there are fifteen medical officers to carry on the work of examination and supervision of the patients.

There can be no doubt the psychiatric clinic is as much a necessity as is a clinic in any other branch of medicine, and from these figures it is evident that the public are as ready to appreciate its value as they are the value of other clinics. It is impossible to express this value in terms of pounds, shillings, and pence, but those who have had practical experience are convinced of the necessity for providing them in all big centres. In the interview which Dr. Orr and I had with Prof. Kraepelin, he was very emphatic in his appreciation of them. From his address at the opening of the psychiatric clinic in Munich we learn that although there was considerable difficulty in getting it started, still, when once the necessity was appreciated, the municipal authorities of Munich made an offer to the university to provide a site, and the State of Bavaria undertook to erect the necessary buildings, to furnish them, and it guaranteed also the management. The scheme was carried out at a cost of £78,500—£68,500 for the buildings, £7,500 for furnishing, and £2,500 to provide for scientific apparatus. This cannot be considered a very serious outlay, especially if we bear in mind the value received, and compare it with the value received for the outlay of millions. Then, again, Giessen is a town of 30,000 inhabitants, but it has a university and a psychiatric clinic containing seventy beds attached to it. One thing which impressed Dr. Orr and myself when going through it with Prof. Sommer was the frequency with which we heard him utter the word "recovering" as we passed the patients. The result of the experience of the value of the treatment of mental disorders in the early stages of the illness led him to tell us that owing to the benefits derived from the treatment of mental disorders in the early stages the Province of Hesse had been able to postpone the building of a new asylum for ten years. This seemed such an extraordinary statement that we asked him if we had understood him rightly, and he repeated the statement with emphasis.

Such are the views of those who have had practical experience of treating mental disorders in the early stages. What do we find in this country? We find, perhaps because of the lack of experience, that, with few exceptions, the subject is left severely alone. Our arm-chair writers direct their attention to safer subjects, such as eugenics, for example, and here they can be happy in feeling they are on secure ground, because they are aware their neighbour knows little more about it than they do. Or they inspire reports, and I quote a sentence from a recent report as a contrast to the encouraging sound of the word "recovering" uttered by Prof. Sommer. In the *Standard* newspaper a few days ago there was a reference to a report issued by the London County Council, in which one paragraph began with the statement, "Once a lunatic, always a lunatic." This is the message sent in this country to our sufferers, a message as brutal as it is unjustifiable. Again, in the *Standard* of February 11th, in the year of grace 1913, there appeared the statement that "the Camberwell Guardians have issued instructions that the use of 'anklets' on violent lunatics in their institutions is to be discontinued."

In our text-books we learn that complete physical and mental rest should be insisted on in the treatment of most cases of insanity. Yet in the initial stages we neglect the patient, and when he cannot keep going any longer we call on the policeman or the relieving officer to carry out first aid. This consists often of dragging him from his home and landing him in a workhouse, and if he becomes troublesome there severe restraint is applied. Then at last, having been coaxed to travel by a promise of three weeks' rest in a sanatorium at the seaside, he ultimately finds himself under lock and key at an asylum. Instead of that I have to suggest that we do not leave these unfortunate people to the Poor-Law officer. Means must be found whereby they may be able to obtain advice before they reach the stage referred to above, and first treatment must be at the hands of experts, and certification, if it should become necessary, must be done after a thorough examination. The fact that a thorough examination has been made before certification, and that the patient has been certified by a man of large experience, will go far to establish the confidence of the public. I maintain also that, as Meyer said at the end of his address, "it stands to reason that if we are able to get access to the cases that are liable to mental disorder at a time when they are still capable

of co-operation, the chance of recovery is very much better than if we wait until the patient has undergone such a breakdown as would necessitate legal commitment."

We have now to consider the educational function of the psychiatric clinic. In the report on "The Lunacy Service in Germany," which I presented to this Committee in October, 1912, I referred in some detail to the methods adopted in that country. Each of the clinics is connected with, or rather forms part of, a university, and, as you know, there is a psychiatric clinic in connection with every university in Germany. They have a director at the head, and under him a series of assistants, residents, and clinicals to carry on the work of treating cases of mental disturbance in a scientific manner, and in the early stages of the illness.

In order that the Committee may have a more comprehensive idea of the facilities for teaching provided in a well-appointed clinic such as that at Munich, I append a list of lectures given in the clinic during the session 1908-9; this list is taken from the *Jahresbericht über die Königliche Psychiatrische Klinik in München*.

By Prof. Kraepelin:

"Clinical Psychiatry."

"Clinical Demonstration for Advanced Students."

"Clinical Experimental Psychology."

By Prof. Gudden:

"Topographical Anatomy of the Brain."

"Psychiatric Polyclinic."

"On the Treatment of Young Criminals in the Federal States."

"Criminal Psychology for Medical and Legal Men."

By Prof. Alzheimer:

"Normal and Pathological Anatomy of the Cortex of the Brain."

"Practical Forensic Psychiatry for Medical and Legal Men."

"Clinical Demonstrations for Advanced Students."

By Dr. Specht:

"Introductory Course in Experimental Psychology."

"Studies in Criminal Psychology."

By Dr. Rüdin:

"Legal Psychiatry for Medical and Legal Men."

"Problems, Facts, and Prophylaxis of Degeneration."

By Dr. Plant:

"Methods of Examination of the Insane: Diagnosis; Spinal Puncture; Cyto-diagnosis; Wassermann Reaction."

I have introduced this list because I fear that very few people in this country have a clear idea of what is included under the term "psychiatry." How many have had instruction or have really had a chance of studying clinical experimental psychology, criminal psychology, or legal psychiatry? How many have paid attention to psychology in its application to children, to the weak-minded in relation to capacity to manage business affairs, or to cases of injury under the Employers' Liability Act? How many have considered its application to education? To how many are the methods of examining the insane taught? How many recognise that, as in other diseases, the basis of our knowledge must be the anatomy, physiology, and pathology of the organ affected? Why is it that we are content to approach the cases so much from the point of view of the symptoms indicating some disturbance of the cerebral cortex and to ignore symptoms dependent on morbid conditions in other parts of the body? Is there not a tendency to rest satisfied with a mere anecdotal series of psychic symptoms? The earliest symptoms may be connected with bodily conditions, and the obvious psychic symptoms, delusions and hallucinations, our stock-in-trade at present, may not appear for years. The reason is that at present we have few facilities for teaching the subject, and the subject is not taught. It must not be imagined that psychiatry, or even the clinical side of it, can be taught in a dozen or twenty lectures. The subject of psychiatry cannot be learnt from lectures and books, as Kraepelin pointed out. An examination of the list of subjects will at once make it evident that practical work and practical experience are necessary in every branch. Text-books and lectures are of little value in this as in other branches of medicine when we come to deal with the subject in the more advanced stages. To this absence



of teaching facilities is due the lack of knowledge of the general practitioner, who should be competent to recognise and possibly to deal with some of the earliest symptoms; to this we owe the lack of real equipment in those who enter the lunacy service. And if this knowledge be not acquired before they enter the service, "the tendency of routine to kill enthusiasm and destroy medical interests" leaves little chance of acquiring it afterwards. It is this which has allowed us to acquiesce so long in the inadequate treatment of those suffering from mental disorders both before and after they enter the asylums. Another point connected with this list to which I wish to direct your attention is that no teacher is limited to one subject. Kraepelin taught clinical psychiatry and clinical experimental psychology; Gudden, topographical anatomy of the brain, treatment of young criminals and criminal psychology; Alzheimer, normal and pathological anatomy of the brain, practical forensic psychiatry, and clinical demonstrations for advanced students. The pure clinician, the pure psychologist, or the pure pathologist is impossible; in fact, no man can become a competent clinician, psychologist, or pathologist unless he possesses a knowledge of the subject in all its branches. You will see that Meyer, speaking of the Phipps Clinic, said: "It is planned to provide a safe basis of practical work for teaching and investigation. And besides the clinical side there is one department for a special study of diseases of the internal organs, another for the study of the functional and anatomical disorders of the brain, and a third for standardising and promoting psycho-pathological investigations."

It follows from this that all branches of the subject must be taught in one institution, and I beg to suggest that a psychiatric clinic attached to a university is the only practical means of accomplishing this end. To establish an isolated central laboratory would be a fatal mistake, and one central institution of any sort would be equally mistaken. It must be remembered that we have to educate the medical student and the general practitioner as well as the men who will enter the lunacy service; and if the general practitioner is to be asked to educate himself, the facilities for instruction must be placed at his door, and it must be made as easy as possible for him. Further, the clinic must make itself primarily serviceable to the immediate community in which it is located. The confidence of the community will be won through the establishment of facilities for treatment, and for instruction in mental disorders, similar to the facilities provided in connection with the other branches of medicine.

Now, it may be suggested that we should attempt to demonstrate the possibility of saving money in order to carry the public with us in this matter. I do not think that is necessary. The value of treatment of the early stages of mental disorders cannot be expressed in pounds, shillings, and pence. Moreover, I submit that our duty as medical men is to guarantee the satisfactory treatment of the patient, and we have no right to allow our action to be dominated by monetary considerations. I feel assured that the more this question is placed before the public in an intelligent manner, the more we insist on the necessity for early treatment, and for scientific knowledge as a basis of any treatment, the less will the public grumble about expense. We have ourselves to thank if the public refers so constantly to money matters. Do we ever encourage the public to regard this question from any other point of view? Do we point out that insanity is a product of civilisation? Do we encourage people to regard insanity as an illness for which something can be done and which should be treated with intelligent and humane consideration? Do we not rather say with the public, "Lock him up, put him where he can harm neither himself nor his neighbour"? Do we not talk of sterilising the unfortunate sufferers and preventing marriage and procreation before we have made an honest effort to investigate what insanity really is, what is the mechanism of its production, and how can we teach those so afflicted to help themselves? How, then, can we expect the public to do anything but grumble at the expense? The public has not objected to spend money in other branches of medicine when the necessity has been demonstrated, and there is no reason, if the members of the lunacy service in this country will develop confidence in themselves, why they should not be able to instil confidence into those outside the profession. But reform must begin in the service itself, and then we shall find that the public will be waiting to listen to what we have to say. I introduce here a cutting from a Liverpool daily paper which will show you that those outside the medical profession are waking up to the necessity of something being done in this direction:

*"The Lunacy Question."*

"The members of the West Derby Guardians, at their meeting yesterday, discussed a letter received from the Toxteth Guardians, advocating the representation of Guardians on the Lancashire Asylums Board in view of the large sums of money expended by Boards of Guardians on the maintenance of pauper patients in Lancashire asylums.

"Mr. ——— referred to the proceedings at the last meeting of the City Council in reference to lunacy cases. An alderman had brought forward the question of the inactivity of the Lancashire Asylums Board in regard to pathological inquiry in lunacy cases. The statement was important to their body, and to other Lancashire Boards of Guardians, as well as to the poor families who made payments in support of friends or relatives in asylums. The West Derby Guardians sent 2,000 patients, not for high-grade workhouse treatment, but for treatment of an expert, up-to-date character. He questioned whether the best was being done for such patients. Lancashire should lead the way in the matter of scientific research in lunacy cases. They had five splendid institutions, which were well equipped, and yet activity in research was wanting."

Lugaro, in his *Problems of Psychiatry*, said: "And where apathy and scepticism of the doctor echo public indifference, want of enterprise and stagnation can lower asylum life below the average of the country."

I will close with another quotation from the same work: "To preserve a crowd of idiots and demented, to reserve special treatment for their benefit in order to maintain them under good hygienic conditions and protect them from disease, may seem to anyone a useless mission, one even socially injurious. It may even be said that such methods are inspired by a misguided spirit of philanthropy, or by a kind of sublime respect for human life, and not by the explicitly defined standards of social utility. This is a gross error. It is the duty of a civil society to protect these rubbish heaps of human personalities, not so much for the advantage thus conveyed to organisms of dim and even degraded consciousness, but for another and useful reason—that of maintaining on a high plane the bonds of social unity of interests against misfortune, and of respecting every feeling of sympathy which, if only computed in pounds, shillings, and pence, may appear to some as sheer extravagance, but which constitutes, nevertheless, an integral part of that treasure of altruistic feelings without which no society could continue and progress. A civil society, which respects the incurable patient, though useless and costly, respects itself, and willingly takes upon itself that moral inheritance which is the result of generations of suffering and hardships, and cannot be expressed in arithmetical terms. The Spartan laws, merciless to the weak, if they can still form the ideal of some parsimonious and uncultured administrators, are repellent not only to those who are looking to the future, but also to the temperate opinion of present society."

## APPENDIX I.

*Conclusions from Dr. Rows' Paper.*

If, in this country, we establish a series of psychiatric clinics attached to the universities, what results can we legitimately expect?

We can expect:

(1) Scientific treatment of mental disorders in the incipient and all other stages of the illness. This duty occupied a foremost position in the Interim Report; it must remain the chief aim of this committee.

(2) Improved instruction for the future medical practitioner.

(3) Systematic instruction for the men who decide to enter the lunacy service, so that they may be qualified to treat mental disorders and to carry on research.

(4) We shall provide centres to which those in the lunacy service may go during study-leave, and which will allow of an interchange of doctors between clinics and asylums.

(5) We shall provide a considerable number of new posts, which will tend to bring into the lunacy service some of the best men, to whom teaching and research work offer the highest attraction. Through the opportunities for instruction afforded by these clinics, asylum medical officers generally will be more highly

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expiry of, study-leave, might migrate to the area of another local authority. To put it plainly the local authority of any one area might object to pay for advantage reaped by the local authority of another area. Were numerous interchanges of staff to become general, to some extent this burden would be shared fairly equally, but such inter-changes are few.

In the Public Health Service, also a Local Government service, most candidates before obtaining appointments have done their post-graduate special work and the necessary studies therefor, a condition of affairs which is not practicable in the Lunacy Service.

In the National Medical Service, the medical officers during, or after return from, study-leave have to satisfy their superiors that they have been diligent and successful in the studies carried on during study-leave, otherwise they are not allowed to remain in the service.

Seeing that such education is a matter of national concern, a solution of many of these difficulties may be found, perhaps, in grants for the purpose being made from moneys in some central fund.

### APPENDIX 3.

#### *Report on the Disabilities of Assistant Medical Officers in Asylums as regards the Medical Work.*

In the Interim Report presented to the Association in July last the following points are mentioned :

- (1) Few asylums possess laboratories properly equipped and staffed.
- (2) Research is dependent on the enthusiasm of individual workers, who receive little reward for their labours.
- (3) The work is apt to begin and end with the discharge of essential routine duties to the exclusion of careful clinical and scientific investigation, and that assigned to junior medical officers is in the majority of cases monotonous, uninteresting, and without adequate responsibility. The opportunities for post-graduate study are few, and this tends to the stunting of interest in scientific medicine.

Two other matters are worthy of consideration :

- (4) The necessity for the proper use of the power to retire compulsorily medical officers who prove unsatisfactory.
- (5) The need for a closer association of the medical staffs of asylums with medical schools and societies.

These points will be dealt with in order :

(1) *Laboratories.*—Although the accommodation is good in some places, it must be admitted that, speaking generally, neither are men sufficiently trained, nor are the institutions properly equipped for carrying out pathological research, or even clinical pathological investigations. As regards the latter, want of knowledge and experience among the medical staff arises from the lack of opportunity to learn how to adopt modern methods of clinical investigation, and is perhaps more responsible for the difficulties than the want of laboratory equipment and appliances. This subject is referred to in other sections of this Report, and all that need be said here is that the absence of facilities for post-graduate study has a deteriorating influence upon medical work in asylums. It must be admitted that scientific medical work is not cultivated as it should be in the majority of our mental hospitals, the two-fold object of which should never be lost sight of, *vis.*, the investigation as well as the treatment of mental diseases.

(2) *Research* is largely dependent on individual enthusiasm, but can certainly be stimulated and maintained by the co-operation of the senior medical staff. It is suggested that superintendents might arrange subjects for original work, as is done at some fever hospitals. There is reason to fear that such work is undertaken in some quarters without any guidance or encouragement from seniors, and laborious original investigations have received little or no recognition from those in authority. A suggestion has been made that the Association might appoint a standing Research Committee, in order to stimulate research throughout the country. Valuable information might be collected from various asylums, special lines of

inquiry suggested, and in other ways the study of mental diseases might be promoted. Prizes might be given for this work.

(3) Although there is no uniformity of practice, report is made that, in many asylums, junior medical officers are placed in charge of chronic cases only, and have no duties in reference to the treatment of newly admitted cases. This appears to be most undesirable. Junior medical officers, in addition to their statutory routine duties, should be given the opportunity of co-operation with their senior colleagues in clinical work. Consultations between the various members of the medical staff in doubtful and interesting cases are very desirable. An assistant medical officer should possess considerable freedom in regard to treatment of his patients, and it is important that, except in emergencies, changes in treatment should not be introduced without conference with him. Surprising as it may seem, reports have been received showing that in some quarters there is a lack of proper co-operation between the medical officers, a matter which prejudicially affects all concerned.

(4) It is desirable that all medical officers entering the asylum service should be appointed in the first place for a probationary period of two years, and that they should not become established officers until they have passed an examination in psychiatry, lunacy law, and asylum administration.

(5) We think that greater use might be made of senior assistant medical officers by teaching hospital authorities, who could appoint them as deputy lecturers or demonstrators to the classes who visit the asylums, and with this object in view the Association might usefully approach hospital authorities and teaching bodies. The appointment of assistant medical officers of some standing as assistant physicians of clinics would give them the opportunity of keeping in touch with modern psychiatry.

The medical societies, especially in the provinces, would, we feel sure, appreciate the opportunities of visiting asylums, holding meetings there, and hearing papers on psychiatry; and we think that assistant medical officers should assist by supporting such societies and showing their interest in the general progress of medicine and surgery.

The subject of post-graduate study is dealt with in a separate memorandum.

#### APPENDIX 4.

##### *Memorandum re Restricted Social Conditions.*

The restricted social conditions vary greatly in different institutions, and it is difficult to generalise them briefly.

These disabilities, although varying greatly in different institutions, are widespread, irksome, and largely preventable. It is probable that they are not in the least appreciated by members of committees who, perhaps, spend two or three hours a month in an asylum.

The conditions referred to which might be remedied are:

(1) *Living out.*—After a certain number of years of institution life most men feel that they would like a house of their own, and if this cannot be obtained in the grounds it should be competent for men to live out on their salary and emoluments.

It should be pointed out that a much more normal social life can be led by a man who has a house of his own.

For purely emergency work at night two medical officers are sufficient even for the largest asylums.

(2) *Marriage.*—At present marriage is allowed only as a favour, and may meet with much opposition; this has been the cause of losing the services of many valuable officers.

A man is usually handicapped by the under-valuation of his emoluments, and he may even have to leave the service. An assistant medical officer ought to be in a position to marry after five years' service in an asylum, including the probationary period.

(3) *Occasional leave.*—It is desirable that this should be as liberal as possible in view of the nature of the work and the isolated districts in which most asylums lie. In many places the superintendent and the senior medical officer are not allowed to be out together, which makes it very difficult for the senior to accept an invita-



tion or make an appointment, thus subjecting him to irksome conditions which are altogether unnecessary.

The best work is done by men who do not feel that they are tied by needless restrictions of personal liberty.

The continuance of these tiresome and annoying conditions rests with the medical staff itself; and in institutions where these grievances are felt most acutely it is often the case that the medical superintendents, who, as the result of their own experience, must be fully acquainted with the feeling of irritation caused by this state of affairs, fail to point out to their committees that many of the old regulations and traditions are totally unnecessary, and only tend to aggravate the disabilities under which asylum medical officers have to live. It is only fair to point out that there are many medical superintendents who have put forth strenuous efforts to improve the social status and to ameliorate the grievances of their medical officers, with the result that a bond of sympathy and good-fellowship has been established among the medical staff.

#### APPENDIX 5.

##### *Memorandum re Salaries of Medical Officers.*

At present the ultimate financial prospect offered to assistant medical officers, as such, is far from attractive. Most asylums have increased the number of their patients and of their medical officers, but there is only one medical position which is really worth having as a finality, namely, that of superintendent.

At a recent examination for entry to the R.A.M.C. there were forty-six candidates for twelve vacancies. It is evident, therefore, that it is not the men who are wanting, but that the asylum service is unattractive.

The well-paid posts are too few in proportion to the rest, and the thoughtful or well-advised man feels that, however interesting the work may be, his prospects of obtaining a superintendent's post are too uncertain under the present conditions to make it worth while for him to enter or remain in the Service. The remedy is obvious. The number of well-paid posts should be increased so that a man entering the Service would have a reasonable prospect of obtaining a financial and social position comparable to that open to men of equal standing in other branches of the profession.

By attracting better men into the Service there is no doubt that the duties and work of the medical officers would be more efficiently performed, both from the point of view of the patients and of the visiting committees.

#### APPENDIX 6.

##### *Memorandum on the Appointment of Medical Superintendents, and Senior Assistant Medical Officers.*

A new appointment of Medical Superintendent involves the whole policy of the Institution for a generation. The welfare of the patients, the effectiveness of their treatment, and the well-being of the staff depend in a peculiar degree upon his ability and character. There are few spheres of life in which so much depends upon the way in which appointments are made.

The present methods of appointment, as stated in the Interim Report, are unsatisfactory. The appointments are made by lay committees who, though genuinely anxious to select the best men, have little opportunity of ascertaining which candidates are really the best qualified. Consequently, appointments may be decided by local influence and sometimes with little reference to professional ability and attainments.

A degree or diploma in psychiatry gives some indication as to the scientific ability of candidates, and it is to be hoped that in time the diploma or some other special qualification will have to be possessed by all appointed to senior posts. At the moment, however, there are many well-qualified A.M.O.'s who can hardly be expected to enter for further examinations. It will generally be admitted that no examination test can fully meet the case, as other qualities are involved, such as

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## DISCUSSION.

THE PRESIDENT said he had now to ask the meeting to discuss the Report of the Status Committee, which dealt with the status of medical officers in institutions for the insane, the consideration of which was adjourned from the previous day. He called upon the Chairman of that Committee, Dr. Bedford Pierce, to introduce the subject.

DR. BEDFORD PIERCE said that since the Committee was reappointed there had been several alterations in the *personnel* of the Committee, Drs. Cole, Hunter, Leeper, and Gane having asked to be relieved. There were co-opted on to the Committee a considerable number of members, seven of whom were assistant medical officers, namely, Drs. Barham, Blandy, Brunton, Daniel, Faulks, Peachell, and Thomas; the five others were Drs. T. W. McDowall, McRae, Nolan, G. M. Robertson, and Stewart. The Committee had met on ten occasions—seven times in London, once in Norwich, once at Leicester, and once at Birmingham; the attendance of the Committee, on the average, had been good, seeing the considerable distance members had to travel to attend the meetings. Since the Committee was formed the average attendance had been twelve. It had been a great pleasure to him to be associated with this Committee, largely on account of the nature of the work itself, but also to a great extent on account of the pleasant associations, and the willingness on the part of members of the Committee to listen to, and endeavour to understand and give due consideration to, the opinions of other members. The general harmony of the proceedings was explained by the fact that all the members were actuated by a common purpose, which was not a selfish one; there had been no attempt to push personal views, though in many instances they were widely divergent. There was, indeed, a general and common understanding to do the best possible in the discharge of the important duty which had been allotted to the Committee. It would be invidious to mention names, because many of the members of the Committee worked hard, and a large number of reports were prepared; but he thought it would not be wrong for him to say that Dr. Collins, the Association's General Secretary, who had so much other work to do also in connection with the Association, had managed somehow to attend every meeting of the Committee; and Dr. Soutar had also been a most valuable member, not only with regard to the preparation of the Report, but also for the suggestions he had made throughout the deliberations. Of course, the Treasurer kept the Committee straight on many occasions, for which they were very thankful. And, lastly, he must not omit to mention the Honorary Secretary of the Committee, Dr. Rows, whose indefatigable work was most remarkable. The mass of material which he held in his hands did not represent all the documents which passed through Dr. Rows' hands in connection with this work. He believed he was right in saying that in order to carry out the purposes of this Committee, Dr. Rows had travelled upwards of 4,500 miles, and he felt the Secretary's labours for the Association deserved special recognition. He did not think it necessary to say much on the Report itself; it spoke for itself. They were aware that, in some respects, it was a compromise; it did not make extreme recommendations, and it might sometimes fail to suggest remedies for obvious evils. Yet, for reasons which were equally obvious, they could not move very quickly, and it was better to go slowly and carefully if real progress was to be made. The main recommendation of the Committee had been in the establishment of psychiatric clinics. These were believed to be essential if effective provision was to be made for the treatment of mental diseases in their earlier stages. The opinion was that there would be a large number of recoveries without formal certification, and without detention in an asylum. There would also be an immense saving in the anxiety of patients, the anxiety of relatives, and less damage to patients' careers. And, lastly, they believed that in the long run there would be a saving of public money owing to the reduction in the duration of the mental illness. Those members of the Association who were asked to advise as to the best methods of treating a person breaking down (such a person as a young governess or a servant-girl in the early stages of melancholia) would be fully alive as to the necessity of some new method of treating such persons. At present, they drifted on until they were bad enough to be brought before a magistrate, and in many instances they were consigned to a workhouse for a time before reaching

the asylum. The Committee considered this to be a most deplorable state of affairs, and considered it their duty to recommend some method of improving the treatment in early cases of mental disorder. They thought such treatment could be conducted on a voluntary basis, very much the same as in general hospitals, without any association with the poor-law or with pauperism; and it was felt that if such institutions were established, a real gain would have been attained in the treatment of mental disease. Incidentally, this undoubtedly would assist in the chief object they had in view; the clinics would provide good facilities for the training of the medical student, for post-graduate students, and for all who were taking up this branch of the profession as a career. The clinics would be centres for research work, and they would provide openings for Directors, who would be men of light and leading in the specialty. With regard to assistant medical officers and their position, that matter had been before the Committee; many of the most regular attenders at the Committee meetings were themselves assistant medical officers, and an effort had been made to suggest lines on which their position could be improved. It was the opinion that the methods of making new appointments were open to grave complaint; that there appeared to be no certainty of promotion, and that unless some better method of ensuring that merit should receive reward were devised, there was serious ground for discouragement, and there need be no surprise expressed that this branch of the profession was unattractive to those who were contemplating a career in it. Many suggestions had been before the Committee with the view of trying to meet these difficulties. He thought there was no need for him to say anything further in introducing the Report, and asking the meeting to adopt it. The Committee felt that the status of the profession was bound up with the scientific progress of its members, with a higher level of scientific attainment on the part of those who were practising this branch of medicine. Occasionally one heard—and he had very little patience with the expression—that the administration was of the prime importance, and that scientific work was a secondary consideration. He considered that anyone who entertained such an idea as that did not deserve to be the medical superintendent of an institution for the treatment of sick persons. It was a case of fouling one's own nest. If superintendents of asylums were not physicians, why not have lay superintendents? The scientific side of the work is of paramount importance; therefore, throughout this Report the Committee had urged that the standard of scientific attainment should be progressively advanced. He asked the meeting to adopt the Report, and he further suggested that if it were so adopted it should be sent to the Home Secretary, the President of the Local Government Board, the Members of the Board of Control, the Chairmen and Clerks of Asylum Boards and Visiting Committees, and the corresponding officials in Scotland and Ireland, as well as to other persons interested, at the discretion of the President of the Association.

Dr. SOUTAR suggested, as a matter of order, that Dr. Bedford Pierce might like to separate those proposals, taking first the question of the adoption of the Report.

Dr. BEDFORD PIERCE agreed.

Dr. ROWS, in seconding the motion, said it was a great relief to the members of the Status Committee that they had at last reached the stage at which they could present a Report to the Association. In that Report they had set forth the conclusions to which they had arrived after much inquiry and consideration, and they hoped the proposals suggested would, to a certain extent, remedy the deficiencies mentioned in the Interim Report of last year. They did not presume to say they had overcome all the difficulties. The subject was so vast and the conditions of service throughout the country were so unsatisfactory and so varied that it would be impossible to include in one report suggestions that would meet all difficulties. But it was of the greatest importance that it should be recognised generally that the instruction of the men entering the Lunacy Service was so inadequate, that the facilities for acquiring a satisfactory knowledge of psychiatry were so limited, that there was so little combination and co-operation throughout the service, that the conditions and prospects varied to such an extent under the various local authorities, and that there was an entire absence of a common ideal and plan amongst those who had a large share in the direction of the asylum service. With this condition of the service there was a growing dissatisfaction. But it did not suffice to indulge

in destructive criticism; a remedy must be found. And, although it was not anticipated that all the details of the proposals contained in the Report would be approved of, it was hoped that the broad principles of the scheme submitted by the Committee would be accepted by the members of the Association, and that subsequent development and improvement would lead to the establishment of a satisfactory medical service for the treatment of the unfortunate people suffering from mental disease. To him it was very remarkable that the treatment of mental conditions had been neglected so long. Perhaps it was that the scientific development of this subject had commenced later than in other departments of medicine and had advanced more slowly. But if psychiatry continued to progress as it had done during the past ten years they would soon be able to demonstrate here also that treatment based on scientific knowledge could yield valuable results. He had much pleasure in seconding the motion for the adoption of the Report.

The PRESIDENT said that after the very able way in which the adoption of the Report had been moved and seconded, by the Chairman and Secretary of the Committee respectively, it was open to any members to raise any points in discussion.

Dr. COLLINS read the following letter from Dr. Bond, of the Board of Control :

"To my great regret I find it impossible, with the programme to be completed up here, to get away to Norwich. Apart from my wish to attend the meeting, it was my intention, on behalf of my colleagues and at their request (as they understood I was going to attend), to express their warm sympathy with the aims set forth in the very valuable 'Report of the Status Committee'; the influence of the work overtaken by it cannot fail to be great."

Dr. HAYES NEWINGTON moved that the letter of Dr. Bond be entered on the minutes.

Dr. McDOWALL seconded.

This was carried, the PRESIDENT remarking that it was of considerable import, and would be a material help to the work.

Dr. STANSFIELD said he rose with extreme diffidence to speak on this matter, because, unfortunately, though he had the greatest sympathy with the objects, and the greatest desire to assist in anything and everything which would add to the status of the specialty, yet he could not find himself in agreement with the Report now presented by the Committee. In it so many doors were opened—and opened widely—and it would mean the expenditure of such a large sum of money that, until governing bodies could be assured definitely and absolutely that they were likely to get a *quid pro quo*, it would not be possible to bring a number of the recommendations made into effect. He submitted that the first thing it was necessary to aim at was to have such a change made in the curriculum of the medical student that it would be compulsory for him to do a certain amount of work connected with the specialty. Until that was done he did not think the other matters mentioned in the Report would make much headway. With regard to clinics, he was personally very well acquainted with most of the continental clinics, and those which, apparently, the Committee had in mind in drafting their Report, and he did not think there was in this country any body which would pay for the establishment of such clinics as the one at Munich, for instance. Speaking personally, he knew, although he had been advocating such clinics for a long series of years, and had tried to educate individual members of committees as to their value and necessity, he had made very little progress, because he was unable to absolutely promise them that there would be a corresponding return for their money. He did not remember exactly the number of the staff at the Munich clinic, though they were mentioned in the Report, but if they were taken, and the stipends were compared with those of men similarly engaged in London, for instance, a very marked difference would be expected. He did not know whether that would be bettered when the Maudsley Hospital came into being, and whether any large number of workers would be found who would give their services. Unless that were so, he feared the result would not be what was, apparently, so commonly expected. As was generally known to members, there was attached to many mental hospitals provision for acute cases, and the fundamental idea of the Maudsley Hospital seemed to be, so far as the people in authority were concerned, that the cost would be, approximately, that of one of the acute departments of a mental hospital. He thought it probable, however, that it



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suggestion that the best method of advancing the specialty, of advertising its advantages, and getting the right sort of men, of dealing with incipient insanity, and improving the status of medical officers, was to insist on, and fight for, an addition to the curriculum, requiring a certain length of time to be devoted to the study of mental disease. If that were granted, the schools would be bound to make proper provision to enable the students to do the necessary work; and that would mean a considerable increase in the number of positions for the present medical officers; and progress could be expected to be made on these lines without necessarily making a claim on the public funds. If the case were approached from that point of view, he thought the success might well be hoped for, a success which he could not see when going through this Report.

Dr. HAYES NEWINGTON said that, although he was a member of the Committee, and therefore involved to a certain extent in the euphemisms of the Chairman as to the conduct of the Committee, he thought it his duty to speak of a member of the Committee whom the Chairman had omitted to mention, namely, himself (Dr. Bedford Pierce). All who had worked so hard on this Committee were bound to speak of Dr. Bedford Pierce's great qualities as a chairman, not only his great carefulness, but his wonderful tact in having no driving views. He had also shown much tact in shedding inconvenient views. There had been many things submitted, which would have involved the Committee pronouncing definitely on many delicate points, which they could not hope to settle to the satisfaction of all if they had been accepted. The Committee, under the Chairman's care, had produced a document which stood by itself in the history of the Association. Many committees had met, and had submitted reports, such as the important one on Mental Deficiency, School Children, the Training of Nurses, Statistics, and so on; but none of those approached this individual report in importance; they had dealt with isolated subjects, valuable in themselves, and all having a bearing on the main question. But this present report raised the whole question of psychiatry, in one way and another. It was a matter upon which this Association had the right and the experience to speak definitely, and when that was so, it should speak to the best of its ability. He thought this report might be said to represent the real views of the Association. He owned that it was of such enormous range, and was so necessarily indefinite in some respects, that it gave opportunity for all the objections raised by Dr. Stansfield, and probably more in addition. Individual members of the Committee had felt those difficulties, but that was no reason why this Association should not give a *pronunciamento* on this subject all its own. It was well known that there would be a difficulty in obtaining certain results; but there was no reason why they should not set forth what they regarded as the ultimate needs. There were difficulties in getting to Heaven, but that was no reason why people should not be told how to get to Heaven; and he thought they were better men for being told. He thought Dr. Stansfield answered himself in one respect, for he said more clinics were wanted. They had not got more clinics because nobody had taken the initial step of advertising the needs, and suggesting how they should be carried through. That he regarded as a most important thing. Members blamed themselves for certain non-existent facts, but why were they non-existent? Because no body had taken the lead in offering advice on the subject. As Dr. Stansfield said, the real difficulty was to convince those who had to supply the money; to furnish them with tangible reasons for spending the money for this purpose. Could hope be held out? He thought it could. Those who had to supply the money could be asked to consider the capital cost of chronic insanity; to put on paper facts and figures as to the cost of building asylums. If a bed, costing, say, £400, was to be held indefinitely by a "chronic," there was so much capital cost absorbed; there was also the cost of maintenance; and if one did a simple arithmetical sum, adding interest on and repayment of capital cost, maintenance, as well as proportion of repairs, it would be found to represent a very large sum. In the case of an ordinary asylum he would not be surprised if it worked out at many thousands of pounds, which might be saved if the patients, now chronic, could have been cured in an early stage. That was the Committee's great argument, and it was the basis of this Report. What they aimed at was a shortening of duration of cases of insanity. That was in addition to and beyond the extra recommendations for catching cases of insanity before they began to cost public money. No one could hope for the proper treatment of incipient insanity unless something in the nature

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agreed that things were not as they should be, and the Committee was asked to continue its investigations, and see what remedies they could suggest to meet the difficulties and defects. The Report embodied such suggestions, and it was possible that others would yet be made. The important point to remember was, that the Committee suggested that, while certain of these undoubted defects might be dealt with under the existing order of things, the Committee recognised that many of them could not be dealt with unless there were an alteration in the law and in the system of asylum government. In the conclusion of the Report, the Committee recommended that a conference of persons and representatives of authorities interested and concerned in psychiatry and asylum management be convened, and that the findings and suggestions of the Report be submitted to that conference with the view to voluntary co-operation in carrying out the proposals, and securing the assent of the conference to alterations in the Lunacy Laws. They wanted to submit to such a conference what they had ascertained by patient investigation to be defects in the system, and to suggest such remedies as had occurred to them. It might be that the conference would suggest other remedies. What was now required was to put before every person interested in the work the facts ascertained and suggestions made by the Committee. That the service was unsatisfactory was undoubted, and good men were not likely to enter it unless considerable alterations were made in it. He could not agree with Dr. Stansfield that a mere addition to the medical student's curriculum would meet the case, for how could men be expected to qualify themselves in this branch if it offered them no career? They would continue to follow other lines which offered more lucrative posts and better chances of promotion. What was desired was the support by members of the suggestions contained in the Report, and then the devising of a practical method of giving effect to them.

Dr. CHAMBERS remarked that it had not been his intention to intervene in the discussion, but he wished to join other speakers in thanking Dr. Stansfield for his criticism; it was criticism of the ideal kind, for it was constructive as well as destructive. He believed, however, that it would be a much more difficult matter to induce the teaching authorities to enlarge the medical student's curriculum than it would be to educate the public on the need for providing better means for treating incipient insanity. The desired reform must come through the public, rather than through the medical schools. He would like to carry Dr. Stansfield with him in that view, for he would be one of their best agents for carrying on the necessary educational campaign. He thanked Dr. Stansfield for the trouble he had taken; he saw the obstacles; doubtless he knew more about these than he, the speaker, did, as he was in touch with the men who had to provide the money: and realising how difficult it would be to obtain funds for the scheme suggested in the Report, Dr. Stansfield naturally thought of some other plan.

Dr. EDWARDS said his criticism of the Report would be that its reference was rather too wide. He thought it would have been better if it had concentrated either on the question of the introduction of clinics in psychiatry, or had been solely devoted to the betterment of the position of the assistant medical officer of asylums in this country. With the latter he thoroughly agreed, but thought the introduction of clinics should scarcely have been included in the Report. The assistant medical officer of to-day is, or should be, the medical superintendent of to-morrow; and there was no desire to see in this branch of the profession the condition of things which occurred in the Army Medical Service thirty years ago, when a boycott set in from the schools, and applicants were admitted to the Service without competition, so that the class of men serving in that branch set it back a generation. Fifteen years ago, the supply of candidates for posts in the Asylum Medical Service were numerous, and there was active competition. Then came the South African War and large numbers of men were diverted thither, and the number of candidates for asylums went down. Last year, the National Insurance Act came into operation and again qualified men found added means of earning a living, in which they could be free to marry, without having the disadvantages and uncertainties of asylum service, and without having to wait a long time for promotion. He would have liked the Report to have concentrated on the improvement of the conditions of the men, who, in the future, would be the leaders in that branch of the profession.

Dr. DANIEL said Dr. Stansfield remarked that psychiatry should be included in

the curriculum. The Committee had one great object in view, namely, to suggest what would be possible of attainment, and the Committee did not think it would be possible to get a lengthening of the curriculum.

Dr. BEDFORD PIERCE said he had very little to say in reply. He was deeply interested in what Dr. Stansfield said, particularly his sympathetic reference to clinics. Though that gentleman apparently thought the Committee were somewhat ambitious in expecting clinics to be established on the subject in England, yet the general tenour of his remarks indicated that he wished they could be established. Therefore he thought there was justification for looking upon Dr. Stansfield as a supporter of the Committee's proposals. One part of Dr. Stansfield's remarks he, the speaker, strongly dissented from, and he did not think what was said was fully meant. He spoke of the diminished value of the medical officer due to marriage; that following that event there was a period of comparative enfeeblement, rendering the person less useful. That certainly was not his experience. The discouragement and disappointment felt by men up and down the country because they could not marry, and the unrest which existed because of that restriction was not to be forgotten; and it was naturally to the advantage of a man that he should carry on his work in the association of normal home life. He had received a letter from a brilliant member of the profession, now in another sphere of practice, on this question of marriage in asylum service, in which he frankly stated that the absence of any prospect of marriage had caused him to leave the practice of psychiatry, and this was no unusual case.

The PRESIDENT, before putting the resolution, desired to remark that, in his view, the pith of the situation was expressed by Dr. Soutar among the able speakers who had commented on this Report. It was, "Were they satisfied with the present state of affairs, or were they not?" Obviously they were not, and they were finding it out more day by day. This Report was an honest, combined endeavour to set things right. The trouble was that up to the present they were preaching to the converted. Those present were keen upon the matter—if they were not they would not be here. But, he feared, what they had chiefly to contend against was, not so much the opposition of lay bodies; he had always found that lay bodies, when the matter was put fairly and squarely before them, were interested, and even sympathetic, in their attitude. But the real difficulty was, and it was the same with other things in the Association, the apathy of large numbers of their own members. So far as he had noticed, there had been no really adverse criticism of this Report to-day; and it was to be hoped that it was a good omen that while it had been received at the meeting to-day without strong adverse criticism, when the further stages of its promulgation came about it might be steered safely through. This, however, was only the initial part of the work; the real work was yet to come.

The resolution was carried.

Dr. BEDFORD PIERCE moved the second portion of the resolution: "That the Report be sent to the Home Secretary, the President of the Local Government Board, the members of the Board of Control, the Chairmen and Clerks of Asylum Boards and Visiting Committees, and the corresponding officials in Scotland and Ireland, and other persons interested in the subject, at the discretion of the President of the Association."

Dr. SOUTAR seconded.

Dr. HAYES NEWINGTON said the Association would be only too glad to be at the expense of sending copies of the Report to others besides those named. Perhaps some members of Visiting Committees would like their own copies, and he took it that his action as Treasurer in this matter would be endorsed.

Dr. MENZIES said that unless each member of a county Visiting Committee could take the Report home and smoke over it, he would never look it through. Therefore he thought each asylum should pay for a certain number of copies for their use.

Dr. HAYES NEWINGTON pointed out that the resolution was purposely framed to permit of a copy going to other persons interested, at the discretion of the President, but he thought it would be more frank for him to say they did contemplate a considerable expense in sending it to people not specifically named.

The resolution was carried.



## THE CONTINUANCE OF THE STATUS COMMITTEE.

Dr. BEDFORD PIERCE said that at the last meeting of the Committee the question was raised whether the Committee should be reappointed. He was requested to say that the members of the Committee were willing to be reappointed if the Association wished it. Much still remained to be done. Some members would have been glad to be relieved, for this Report had entailed a great deal of work, but the Committee, as a whole, were willing to be reappointed. He therefore proposed "That the Committee be reappointed, and be empowered to make arrangements for a conference, as proposed in the Report, such arrangements to be subject to the approval of the Council."

Dr. McDOWALL seconded.

Carried.

Dr. SOUTAR said that the next step would, presumably, have to come from the Council.

Dr. HAYES NEWINGTON said the idea now was to find a suitable authority to accept the invitation to a conference on the subject, and that would entail inquiries of a delicate nature.

It was agreed to leave the further negotiations to the Council.

Dr. COLLINS suggested the addition to the Committee of the name of Dr. Stansfield.

Dr. STANSFIELD said he was willing if it was the wish of the meeting, and it was thought he could be of any use.

This was agreed to.

## THANKS TO THE PRESIDENT.

Dr. HAYES NEWINGTON said it had often been his privilege at the Annual Meeting in former years to offer to the President, on the Association's behalf, hearty congratulations on a successful meeting. At this meeting, there had not been so many members as usual, but there was a very good sample of members, who showed great interest in the Association's work. Much had been done both with regard to scientific and social work; there had been much enjoyment from the visit and there was a prospect of still more.

This was carried by acclamation, and briefly acknowledged.

## THANKS TO THE LORD MAYOR AND CORPORATION.

The PRESIDENT proposed, and the meeting carried in a hearty manner, thanks to the Lord Mayor and Corporation for kindly allowing the Association the use of the Guildhall for the meeting.

The meeting then terminated.

A Special Meeting was held at 11, Chandos Street, London, on Tuesday, August 25th, 1914, Dr. James Chambers, Ex-President in the Chair. It was summoned by the President to consider a proposed alteration in the Articles of Association.

*Members present:* Drs. Chambers, Fletcher Beach, D. Bower, R. Brown, J. R. Lord, G. E. Miles, J. G. Soutar, R. Percy Smith, W. H. B. Stoddart, and the Hon. Gen. Sec. M. A. Collins.

The CHAIRMAN: You have had a circular, gentlemen, so you know the occasion of our meeting.

The HON. SECRETARY (Dr. M. Abdy Collins): Perhaps I had better explain. When we were looking through the Bye-laws before arranging for reprinting, the Treasurer noticed that the number of members was limited to 700, and suggested that I should communicate with the Solicitor on the subject. This is the Solicitor's reply (reads letter). I sent that letter to the President, and to the Treasurer, and the President authorised the calling of this meeting, to put forward the suggested motion as printed on the agenda.

After some discussion Dr. SOUTAR proposed the following resolution: "That the number one thousand be substituted for that of seven hundred in Article 1 of Articles of Association of the Medico-Psychological Association of Great Britain and Ireland."

Dr. STODDART seconded.

The CHAIRMAN: I now put the resolution, as proposed by Dr. Soutar and seconded by Dr. Stoddart.

Carried.

The meeting then terminated.

#### SOUTH-EASTERN DIVISION.

THE SPRING MEETING of the South-Eastern Division was held, by the courtesy of Dr. T. Seymour Tuke and Mr. C. M. Tuke, at Chiswick House, Chiswick, on Thursday, April 30th, 1914.

Among those present were: Sir George Savage, Drs. Bailey, Baird, Beach, Berncastle, Boys, Chambers, Dove, Edwards, Earls, J. L. Gordon, Haynes, Hart, Higson, James, Johnston, Nicholson, Norman, Oliver, Passmore, Scott, Shuttleworth, Stewart, C. M. Tuke, Seymour Tuke, Turner, Watson, Wilson, and Dr. Noel Sergeant (Hon. Divisional Secretary).

Letters and telegrams expressing inability to be present were received from Drs. Beresford, Bevan Lewis, Blachford, Caldecott, Cole, de Heiger, Drapes, Ewart, Harper-Smith, Kidd, Lord, Newington, Rawes, Rayner, Percy Smith, Soutar, Stansfield, Steen, Stevenson, R. Stillwell and F. R. P. Taylor.

At one o'clock the members were entertained to luncheon, at the conclusion of which Dr. Chambers gracefully proposed the health of the host, which was drank with acclamation.

The Meeting of the Divisional Committee was held at 2.15 p.m.

The General Meeting was held at 3 p.m. (Dr. Chambers in the Chair).

The minutes of the last meeting having been printed in the Journal, were taken as read and confirmed.

The President and Secretary were empowered to arrange for the Autumn Meeting, and on behalf of the Division accepted with many thanks the invitation of Dr. Rawes to meet at St. Luke's Hospital on Thursday, October 8th, 1914.

The Date of the Spring Meeting was fixed for April 28th or 29th, 1915.

The following paper was then read:

#### "CHISWICK HOUSE"—NOTES ON ITS HISTORY, 1893 TO 1914.

By Dr. T. SEYMOUR TUKE.

I have called this somewhat discursive paper "Chiswick House, 1893 to 1914," to mark the fact it is "come of age" this year, but for the instruction of my younger brethren I should like to point out that the licence on which we are now working has been granted without a break since 1846, and that it was transferred from the Manor House, Chiswick, to Chiswick House in 1893: three generations of Tuke's have had the control of the two houses, and possibly a fourth may be in charge some day—before streets and houses blot us out, as they have done the Manor House.

The books contain many names of bygone commissioners-in-lunacy of our own speciality, and the profession generally, and are an interesting link with the past. I may mention that a patient died in 1906 at an advanced age, who had been certified by John Conolly of Hanwell, our grandfather.

The retrospect of the last twenty-seven years or so is not without interest, for the interval has marked great changes in the knowledge of, and the management and treatment of, insanity. There has been great progress made in the purely scientific side of the work, discoveries of high interest have been made by the pathologist and the bacteriologist, of which we have cause to be proud. But the questions we ask are: Are we justified in being proud of the practical results of

it all? Is our grasp on insanity firmer, and are we doing better now than we did before, and ought there not to be more fruit of our labours? Have we pursued the true object of our lives, the amelioration of unsoundness of mind? Is there not rather a tendency to regard insanity in an altogether different light, to call it by less unpleasant names, and to make excuses for it? Are there not signs that causes are at work that run counter to our object, which favour non-interference and non-intervention especially?

Working among the educated insane and seeking for the causes of their insanity one finds among these:

- (1) The increasing selfishness and apathy of the time.
- (2) The increasing reluctance of people to interpose—the "wait and see" attitude.
- (3) The hesitation about definite action among relatives, friends, and doctors and their unwillingness to take legal steps.
- (4) The way in which "certification" is made a "bogy" of.
- (5) The word "uncertifiable."
- (6) The latitude allowed to "borderland" cases, cranks, etc.

All these causes tend to that most fatal of all things in the management of the insane—delay, and the results are seen plainly nowadays in many different ways, and in many different places and situations, and one fears that there are signs of the public patience becoming exhausted in consequence. The words "insane," "mental unsoundness" are being heard and written rather often just now, and the fact seems to reflect on us, and we cannot get away from it.

Efforts are made to prove that insanity is not increasing, but at times it looks rather as though sanity were at a discount.

Quo tendimus? Where is our United Kingdom machine going? Is that old gyroscope called "national character" that used to steady it failing, or is it likely to "get going" again? Is reaction coming, and is the pendulum going to swing back again? God grant that it may, for, without being unduly pessimistic, it does seem as though every tradition that we as Britons used to revere is being upset; that honour, honesty, fair dealing, purity of motive, shame at doings that not long ago would have been considered "dirty," and that clear-headedness and clear-sightedness that we used to look for, especially in high places, are being lost, and replaced by chicanery, effrontery, slyness, and what is known in South Africa as *slimness*. These things—these object lessons we are so constantly seeing—are not signs of well-balanced mentality, to say the least.

It seems strange that at a time when there never was more spoken and written about insanity, and nervous troubles of all kinds, when there is so much thought about acute case hospitals and the early treatment of this disorder, when hygiene, physical culture, the care of the feeble, and the regeneration of the degraded excite the interest of so many worthy people, to find so much time wasted over unfortunate criminals, who are on the face of it mentally afflicted, and so much callousness about crime as crime, so many sad cases of suicide, in which there can be no doubt delusions existed, and were known of, that are allowed to drift without help. Ought we to hear this whisper, this whisper of a selfish generation that hates altruism, and hates trouble, "best thing he could have done," "good job," and so on? It makes some of us wonder how deep our boasted civilisation really goes, and whether we are so much ahead of the East as we think in our self-complimentary way we are. However, this may be, we have one duty, and that is to throw ourselves on the side of what is of good report, what is true, what is rational, what is reasonable, what is good, and give no support or countenance to those things that I have mentioned. Our old Association was founded to improve the welfare of the insane, and that fact we must not lose sight of.

Again, looking over the years, one notes the arrival of new remedies, and every year brings out some new hypnotic, or some variation of an old drug, or a really new one; we had very few in the old days, and we depended less, perhaps, on them than on fresh air, exercise, and comparative freedom from restraint, however well-intentioned. Acute manias used to recover without hyoscine, though hyoscine was certainly used at times, as also were bromides, opium very carefully, and a certain amount of aperients. Chloral hydrate, a drug that dates back for over thirty years, was used a good deal as a hypnotic, and the bimeconate of morphia as a sedative in restless and simple maladies. Nowadays it does seem as though

great reliance is placed on drugs, and it is a question whether this reliance is not getting rather over depended on, and whether there is not rather a tendency to overdo it, to dash at excitement with hyoscine, depression with strychnine, and to vary this with digitaline, morphia, and the like, to say nothing of the legion of hypnotics with fascinating names. This can all be done with the patient in bed, and I simply ask for information, as opinions differ about this. Some day, perhaps, we may have a discussion on this point. Some drugs we use, and are grateful for, but the thought arises, are the modern hypodermic drugs going to effect real cures in mania to the elimination of those things which we have been bred to think essential and useful, such as the room to move about, fresh air and exercise, that I have mentioned? Do the cases do as well that are thus treated at home and in private? Are the cures successful and permanent? They avoid certification, it is true, but do they do as well in the cases that have a freer run?

Some day—I probably shall not be here to see it—when the public mind has become converted to the thought that treatment and cure are possible, and that the earlier steps are taken, the better is the chance of recovery; when we hear no more of stigma and disgrace, and when it will be a matter of course to send cases of all kinds of mental disorder for treatment to institutions adapted for them, we shall be in a far better position to attack the trouble at its source. At present the educated person of unsound mind does not seem in the least inclined to rush for advice, or to ask for treatment. I should personally welcome anything that would hasten early care and treatment, prevent delay, and the establishment of some procedure such as exists in Scotland for dealing with cases in an earlier stage.

After all, I can't help thinking that the man with clinical knowledge will do best, and succeed best in the management of the insane. It is all very well to think and say that anyone can do it. There is a danger, due to many causes, that our rising generation, in their desire to be progressive and up-to-date, may, with the most honest and good intent, while following up the scientific side, neglect the practical.

In such a small asylum as this, it seems almost absurd to talk of statistics, especially in the presence of men who deal with thousands of cases. But we all have the same inspiration, and I trust the same aim, and though there may be grander places we have always felt that there is a charm in what I might call the informality of this house, and in the fact that it was never built for an asylum, that seems to appeal in many ways. The years that have passed have not been marked by many very remarkable incidents, but are just filled with steady work. Our statistics (extract appended) show the scope of the work done, and the variety of the cases dealt with. In every direction, and always, my brother and partner has been foremost and most energetic, and I am glad to record my testimony to this. There has been and always will be, while health and strength lasts, a constant interest for both of us, both inside and outside the house, in advancing the welfare of the insane under all conditions.

#### CHISWICK HOUSE. ABSTRACT STATISTICS, 1893 TO 1914.

	Males.	Females.	Total.
Admissions (including mania, melancholia, general paralysis of the insane, paranoia, epilepsy, dementia præcox, sex perversion, etc.)	127	108	235
Discharges: Recovered	26	45	71
Relieved	42	39	81
Not improved	2	4	6
	70	88	158
Deaths (including fourteen from general paralysis of the insane)—average age, males, 56; females, 66	34	13	47
Remaining	15	15	30

At the conclusion of the paper Dr. CHAMBERS spoke, expressing his gratification at being able to be present to hear it, and regretting that he could not stay for the discussion.

Sir GEORGE SAVAGE then took the chair, and carried on the discussion. He referred to the times when the only consultants were those who had private asylums to which they could send their cases, and where they could carry on the observation and treatment of their cases. Dr. Hack Tuke was about the first, and he himself was one of the earliest independent consultants unconnected with any private institution. Private asylums were undoubtedly the best places for many cases, which could not possibly receive proper care and attention elsewhere. He instanced a case to which he had been called, where he was informed that everything that could be done had been done, that eight nurses had been engaged, and where the unhappy patient said she felt she was being made insane by them.

Dr. STEWART endorsed Dr. Chambers' encomium of the paper.

Dr. SERGEANT and Dr. TURNER also discussed the paper.

Dr. SEYMOUR TUKE and Mr. C. M. TUKE replied.

After passing a hearty vote of thanks to Dr. Seymour Tuke, the meeting terminated, and the members were entertained to tea by Mrs. Tuke.

#### IRISH DIVISION.

THE SUMMER MEETING of the Irish Division was held on Thursday, July 2nd, 1914, at Carlow District Asylum, by the kind invitation of Dr. Thomas Adrian Greene. The following members were present:

Dr. W. R. Dawson (in the chair), Sir John Lentaigne, Drs. Considine, Greene, Nolan, Gavin, Keene, O'Mara, Oakshott, W. Eustace, Rainsford, Benson and Dr. Leeper (Hon. Secretary).

Letters of apology for unavoidable absence were read from Drs. Hetherington, O'Neill, and Rutherford.

The minutes of the previous meeting having been read and signed, Dr. W. Eustace proceeded to read his communication (held over for want of time from the Spring Meeting).

#### SOME CONSIDERATIONS ON INTESTINAL AUTO-INTOXICATION.

BY WILLIAM N. EUSTACE, L.R.C.S. & P.Irel.

Intestinal auto-intoxication is a disease produced by the absorption from the alimentary canal of chemical poisons, of known and unknown composition, due to abnormal metabolism or bacterial activity, the blood serving as the channel of distribution to those tissues affected by the poison. The greatest authorities on intestinal auto-intoxication in Switzerland, Germany, and France, recognise that experimental proof of this condition is far from satisfactory, which is not astonishing, as the difficulties are enormous, and the conditions under which the experiments should be made almost impossible to accomplish. Nevertheless, I am inclined to believe that the study of it is of more value in asylums than that of "vaccines," the administration of which is dangerous, except when administered by one who has made it a special study. I believe there are more cases of intestinal auto-intoxication among the insane than the sane, because of the way the former are liable to abuse their alimentary tract. This disease has been reproduced in animals by injection and inoculation of intestinal products, and all the lesions of auto-intoxication in man produced.

*Histogenic auto-intoxication.*—This occurs when the fats and albumens of the body are destroyed rapidly; fatty volatile acids are formed, and also large quantities of ammonia, which the acids take from the albumens and combine with. When the fats are especially attacked, *acetone* is produced. This form of intoxication is sometimes called *acetonæmia*. It accompanies, and is characteristic of, starvation, carcinomatous cachexia, grave anæmias, intestinal affections, and especially grave diabetes.

*Organopathic auto-intoxication.*—This occurs when certain glands intended for the elimination of noxious substances become inefficient. Then retention of these toxins takes place, which brings about grave morbid conditions, which vary with the glands at fault, for example: Uræmia, cholæmia, myxœdema, and acromegaly, when the kidneys, liver, thyroid, and suprarenals are respectively affected.

*Gastro-intestinal auto-intoxication.*—In normal digestion, as well as digestion



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fully treated medically; those of long duration require surgical treatment. (2) The paramount importance of oral sepsis must be observed. (3) Suitable diet is a diet which will not produce ptomaines, but will encourage aerobic bacteria. (4) Abdominal belt, and exercises which develop the abdominal muscles, and the administration of liquid paraffin. (5) *Surgical Operations*: Short-circuiting the intestinal flow by ileo-colostomy. The ileum is divided about six inches above the ileo-cæcal valve, and its proximal end implanted into the pelvic colon as low down as possible. Colectomy is performed for cases where the colon is extensively diseased.

Dr. W. R. DAWSON said he wished, as Chairman of the Meeting, to thank Dr. Eustace for the valuable paper. The subject of auto-intoxication was of an importance we could not ignore in connection with insanity.

Sir JOHN LENTAIGNE gave an exhaustive and clear account of the diseases produced by auto-intoxication, and of his large experience of the condition, and the serious results to health produced where the condition was insufficiently recognised and unskillfully treated.

Most of the cases he had seen which were improperly diagnosed were mistaken for cases of chronic appendicitis, and ulcer of the stomach. Although these cases got better if operated on, they never got well, and where gastro-enterostomy had been done without any permanent or real benefit, the cases were due to intestinal auto-intoxication.

Sir John reviewed in detail the opinions of Sir Arbuthnot Lane and others as regards the condition under discussion, and said that all authorities seemed agreed that ptomaines contained in the intestines were absorbed into the circulation, and were productive of auto-intoxication. All, too, were agreed that these ptomaines were absorbed through the large intestine. Nobody, he stated, died of old age, everybody died of disease, and disease frequently begins by constipation and intestinal stasis.

Medical treatment for the condition of auto-intoxication was very difficult and troublesome. Treatment required must be persistent, and the intestines must be emptied frequently. For the poor medical treatment was most difficult, if not impossible, owing to the difficulties of carrying out the treatment for a sufficient period of time. He did not practise Sir Arbuthnot Lane's radical measure, he simply short-circuited the small intestine, and no poisoning occurs from the small intestine, but always from the large.

Although he did not wish to speak too dogmatically upon the subject, the cases he had operated upon by this method had been so far successful in many instances, and left him much impressed by the value of the operation. In cases of dementia præcox, as in maniac depressive insanity, Dr. Lewis Bruce had found a large increase of proteolytic bacteria in the intestinal contents.

Dr. BENSON wished to direct attention to three cases he had recently treated in his asylum. They were admitted in an acutely maniacal condition, with foul tongues and also deep cracks in the tongue. All were treated by a milk diet and the administration of large doses of sulphate and carbonate of magnesia. Within three months recovery occurred.

Dr. Gavin and Dr. O'Mara also joined in the discussion. Dr. Eustace thanked the members for the way they had received his paper, and for the interesting discussion it had produced.

Dr. Rainsford next read a paper introducing the discussion, of which the members had previous notice, on "The Use of Hypnotics in Acute Mania." Dr. Nolan thanked Dr. Rainsford most heartily for his communication, but, as many of the members had to leave, it was decided to adjourn the discussion (with Dr. Rainsford's consent), till the Autumn meeting, owing to the lateness of the hour.

As the Chairman had to leave, Dr. Greene was moved to the chair. Lord Wolmer's Bill *re* Superannuation and Employment of Asylum Officials was next considered. After a discussion in which Dr. Nolan fully joined, and gave valuable information, it was decided to take no further action in the matter at present. The position of Irish Asylum officials as regards their superannuation under the Government of Ireland Bill was then discussed. It was decided to take no further action at present, but that Dr. Nolan, Dr. O'Mara and Dr. Greene be requested to obtain all information possible from the Irish Parliamentary party, and to report the result at the next meeting of the Division.

Dr. Leeper proposed a cordial vote of thanks to Dr. Greene for the most enjoyable day he had given them, and for his hospitality. He begged to move that the best thanks of the meeting be tendered to Dr. Greene. This having been seconded, it was passed with acclamation, and the proceedings terminated.

#### PARLIAMENTARY NEWS.

The following Bills, of interest to members of the Association, have been presented to Parliament:

(1) A Bill to amend the Asylum Officers' Superannuation Act, 1909, presented by Mr. Duncan Millar, and supported by Sir John Jardine, Sir Charles Nicholson, Mr. Barnes, Capt. Gilmour, Mr. William Redmond, Mr. Crooks, Sir John Bethell, Col. Burn, and Capt. Campbell.

"Clause 1 sub-clause (1) applies to women workers of the first class. It raises the period of service for pension from 20 to 25 years, but allows the pension, irrespective of age. Sub-clause (2) allows a visiting committee of an asylum to grant a pension to male officers of the first class after 25 years' service, subject to a minimum age limit of 50. Clause 2 enables the visiting committee to make a grant to a worker of less than 10 years' service who is permanently incapacitated through illness acquired in the execution of duty. Clause 3 deals with gratuities to widows and children. Clause 4 calculates the pension on the average salary of the last five years instead of 10. Clause 5 arranges for distribution where a pensioner who is illegitimate dies intestate. Clause 6 substitutes one year of service for two years in aggregating terms spent in different asylums. Clause 7 makes service in parochial asylums in Scotland count in this aggregate. Clause 8 allows those who contracted out of the Act of 1909 to come in on terms. Clause 9 deals with the classification of established officers or servants, and Clause 10 allows an appeal on classification to the Commissioners in Lunacy (Board of Control)."—*Abstract from Introductory Memorandum.*

(2) Voluntary Mental Treatment Bill, 1914, presented by the Earl Russell.

"This Bill is intended to secure that persons whose mental condition is uncertain, but requires medical treatment to prevent their becoming lunatics, may receive such treatment in a manner which is at present impracticable, owing to the present state of the law.

"The existing law assumes that a given person is or is not insane, and takes no notice of early symptoms of insanity. These symptoms are curable by early treatment, but, although medical treatment of a person who is not insane may be given without fear of penalty, any person who keeps such a patient is liable to be prosecuted under section 315 of the Lunacy Act, 1890, on the ground that the patient is in fact insane. This risk attaching to early treatment without a certificate of insanity is so great that it is almost impossible to secure adequate medical treatment for such patients, nor can they be kept under observation; and consequently they are left to become lunatics in fact or, in order to avoid that consequence, it must be assumed already to have taken place. Thus, in order to prevent patients becoming confirmed lunatics by neglect, there is a strong tendency to certify all doubtful cases as insane. Of these the great majority very quickly regain their mental equilibrium, and are sent out again perfectly sane, but with the stigma of insanity upon them, and having been subjected to deprivation of liberty and rights. This inflicts exceptional hardship upon persons with families, and such classes of persons as clerks and teachers and governesses, whose chance of earning a livelihood is practically destroyed by having been certified as insane.

"The Bill is intended to remedy this defect. By giving permission to treat such patients, while making adequate provision against abuse, and providing that they can only be detained while they are willing, the law will be restated so that mental disorder of a kind which merely demands observation and treatment will be kept distinct from insanity, with which it is at present confused merely by reason of fear of prosecution, and not by reason of any express provision of the Lunacy Acts. The section in question was inserted for the protection of the public; its application tends to harm the public. This Bill is intended to make it clear that to treat and observe persons whose mental condition is in

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doubt does not render those who are responsible for their treatment liable to penalties intended to protect the interests of lunatics, and not to harm those who are not yet, but may become, insane.

"The rest of the Bill is machinery for effectively carrying out the main object."—*Copy of Introductory Memorandum.*

These Bills can be purchased, either directly or through any bookseller, from Wyman & Sons (Ltd.), 29, Breame Buildings, Fetter Lane, E.C. Price 1½d.

#### LONDON COUNTY COUNCIL.

##### VOLUNTARY BOARDERS AT THE MAUDSLEY HOSPITAL.

THE Asylums and Mental Deficiency Committee of the London County Council, on July 14th, recommended the Council to pass the following resolution:

"That application be made to Parliament in the session of 1915 for authority to make the Maudsley Hospital available for the reception and treatment as voluntary boarders of persons suffering from mental infirmity, upon such terms and conditions as the visiting committee may think fit; and to enable the County Council, or any board of guardians in the County of London—if they think fit—to defray the whole or part of the expenses of maintenance in the hospital of such voluntary boarders."

The Committee pointed out that although the Lunacy Act, 1890, provided that a person not certifiably insane might submit himself to treatment for incipient insanity by entering as a voluntary boarder a licensed house or registered hospital, voluntary boarders could not be received in a county asylum, even by payment. It was extremely desirable that there should be power to permit voluntary in-patients to be received for treatment in the Maudsley Hospital, and the Board of Control, which had been informally approached, concurred in this view. As the Maudsley Hospital would be a county asylum for the purposes of the Lunacy Acts special powers would be required. The method proposed would be more simple and satisfactory in regard to cost of maintenance than the alternative of treating the patient after admission as a pauper, and calling upon the board of guardians to pay for him. The Committee could not say at this stage what the cost of provision for voluntary boarders was likely to be, but if a poor patient by early treatment could be saved from the necessity of certification as insane, and from compulsory detention in a county asylum, some saving in the total cost of lunacy administration should result.

The Council passed the resolution—(*British Medical Journal*, July 18th, 1914).

#### UNIVERSITY OF EDINBURGH.

##### HONORARY DEGREE OF LL.D. CONFERRED ON DR. MOTT.

Amongst those who received the honorary degree of LL.D. at the graduation ceremonial on July 3rd, was Frederick Walter Mott, M.D., Pathologist to the London County Asylums.

In presenting Dr. Mott, the Dean of the Faculty of Laws said: "It is my privilege to present next an acknowledged leader and guide of medical opinion in the great and growing department of psychiatry, one who is held in equal honour on both sides of the Border. A graduate of London with the highest distinction, Dr. Mott served a long apprenticeship to general medicine as physician to Charing Cross Hospital, and was elected a Fellow of the Royal Society in 1897 in recognition of his valuable researches on the comparative anatomy and physiology of the brain and spinal cord. For the past seventeen years he has held the post of pathologist to the London County Asylums, and has devoted his energies to a department which he has made peculiarly his own—the pathology of the brain and mental disease. To take but a few examples of his original investigations in this field, he has demonstrated that syphilis is the essential cause of general paralysis of the insane and locomotor

ataxy; he was the first to describe the changes in the brain produced by sleeping sickness; and he has elaborated from statistics and pedigrees an instructive study of the influence of heredity in relation to epilepsy, feeble-mindedness, and insanity. The results of these and many other researches in neuro-pathology, Dr. Mott has presented with fulness and clearness in standard text-books and special journals, while he has delighted many a professional gathering by luminous addresses like the Morison lectures delivered in this city. Nor must I omit to mention his strenuous exertions in connection with the establishment of the Maudsley Hospital for the study and treatment of incipient insanity. Many honours have rewarded Dr. Mott's outstanding services in forwarding the scientific study of mental disease, and in alleviating the unhappy lot of its victims, and the University would fain add its tribute of admiration and esteem by enrolling him among its honorary graduates."—(Abstract from *British Medical Journal*, July 11th, 1914.)

#### NOTICES BY THE REGISTRAR.

*Nursing Certificates.*—The next examination will be held as follows:

Preliminary . . . . . November 2nd, 1914.  
Final . . . . . November 9th, 1914.

*The Bronze Medal and Prize of the Association* was awarded to Dr. J. C. Wootton, Cane Hill Asylum.

#### EXAMINATION FOR THE CERTIFICATE IN PSYCHOLOGICAL MEDICINE, JULY 6TH, 1914.

1. Describe the chief symptoms bodily and mental in a typical case of melancholia. State its chief risks, its curability and the principles of treatment.
2. Describe fully epileptic insanity.
3. What are the chief dangers of forcible feeding and what precautions should be taken to guard against them?
4. Give an account of the naked-eye morbid anatomy of general paralysis and compare the chief morbid changes found in this disease with those present in ordinary gross dementia.
5. Give the definition of defectives, as laid down in the Mental Deficiency Act, 1913.
6. Discuss what symptoms of mental disease in a testator may invalidate his will.

#### *List of Successful Candidates.*

Dr. J. N. G. Nolan, Major W. J. Taylor, R.A.M.C., Dr. J. M. Gage, Dr. Maxwell Ross.

#### EXAMINATION FOR THE NURSING CERTIFICATE, MAY, 1914.

##### (a) *Preliminary Examination.*

1. Describe what you know of the structure of the knee-joint.
2. Describe the appearance and texture of the lungs. Through what structures does the air pass in the act of inspiration?
3. Name the organs of excretion. Mention some of the waste products given off by them.
4. What are the various causes of wasting in a patient?
5. What is an antiseptic? Give three examples, and say how you would prepare each for immediate use in dressing a wound.
6. In a case of bleeding how would you tell whether it came from an artery or a vein? How would you render first aid in the case of severe venous bleeding from the leg?
7. What points should a nurse note as to the sleep of a patient? In what way may a nurse help a patient to sleep?
8. Mention some of the common corrosive poisons. What symptoms would lead you to suspect corrosive poisoning? What immediate treatment would you employ in such an emergency?



(b) *Final Examination.*

1. Name the principal ductless glands. State where they are situated and describe their more important functions.
2. At what stage in the course of a specific fever is it possible to differentiate the disease? Contrast the symptoms of measles with those of scarlet fever.
3. One of a party of asylum workers receives a stab from a hayfork in the upper and inner part of the thigh, and which bleeds profusely. What blood vessels may have been opened, and what would you do for the injured person?
4. Describe step by step the application of the long splint to a case of simple fracture of femur.
5. A patient has a large hernia in the groin. Describe the general management of the case. What symptoms would point to strangulation of the hernia?
6. Mention the precautions to be taken in feeding a case of general paralysis in the advanced stage of the disease.
7. If called upon to supervise the exercise to be taken by a case of manic-depressive insanity (recent mania or melancholia) upon what lines would you proceed? What dangers might you have to fear?
8. Describe the mental characteristics of a case of hysterical insanity.

*List of Successful Candidates.*

## PRELIMINARY.

*Chester County, Macclesfield.*—Mary Pollock, Martha Ayre, Elizabeth Cameron. *Chester, Upton.*—Lizzie Day, Nellie McGetrick, Alice Knowles, Constance Wharam, Mary Elizabeth Butler, Elizabeth Cadwell, Mona Darlington, Agnes Lawley, Eleanor Beatrice Higginson, Arthur Johnson, Harry Maund Morris, James Alexandra Benson.

*Cumberland and Westmorland.*—James Scott, John Foster, Thompson Storey, Joseph McKenzie, Hannah Willis, Catherine Carson, Elizabeth Glen Clarke, Ethel Ann Hough.

*Derby County.*—Henry Thomas Vallance, William Hugh Smith, James Halloran, John Bailey, Alexandra C. Carrie, Hilda Mary Mills, Violet Wright, Annie Gertrude Jeffrey, Eva Lilian Cross, Emma Hoult, Mabel Hulland.

*Devon County.*—Harry Haskett Channing.

*Essex, Severalls.*—John C. G. Barrett, Sydney Herbert Trower, Arthur Ransby, Charles A. Stevenson, Ernest Shepherd, Florence Wainwright, Annie Heatherwick, Mary Gerrie, Kate Stanford Smith, Amy Bellingham Chapman, Margaret T. O'Donovan, Dora M. Debenham, Emma Watson.

*Essex, Brentwood.*—Lilian Rheinlander, Irene C. McFarlane, Annie Josephine O'Donovan, Gertrude Duligal, Elizabeth Jane Marsh, Florence Heading, Edith B. Dobberson, Alice Emily Redman, Lily Morrell, Brigid Mary O'Reilly.

*Glamorgan, Bridgend.*—Lily Isabella Chandler, Katie Tornsey, Annie Beer, Sarah Ann Rees, Ethel Annie Peake, May Macdonald, Margaret Lewis, Hettie Thomas, Mary H. L. Jones, Edith Hopkins, Bessie Thomas, Bartholomew Gormley, Robert John Evans, Mary Williams, Mary Evans, Bessie James, Charles G. Williams, Henry P. Parry, Hugh E. Parry, Lloyd Jones, William Francis Cottrill, Ernest Richard Salisbury, Albert George Lang, Mildred Minnie Jory, John Thomas Hall, George William Bryant, Cyril Howard Portloch, Frank William Thomas, William John Heath.

*Herts. County, Hill End.*—Jabez A. W. Whetton, Emily Martin Weightman, Percy Sims.

*Three Counties, Hitchin.*—William Lawson, John Henry Buckley.

*Kent County, Maidstone.*—Eva Catherine Summersett, Mona Jarrett, Janet Russell Cochran, Hannah Jane Kirby, Emily Jane Hursell, Mildred Annie Oliver, Agnes Jane Turner, Florence List, Cecil Ernest Butter, Noel Downs, Robert Austin Brooker, Frederick Curtis, Mary Harvey, Dora Louisa Henwood.

*Kent, Chartham.*—Samuel Haste, Margie Gambrill, Daisy Haste, Kate Annie Creasey.

*Lancaster County.*—Adelia Gannon, Lily Atkinson, Frances B. King, Annie Kendall, Jane Priscilla Ashcroft, Ethel Agnes Park, Helena Walker, Mary Beattie

Sarah E. Foulds, Ellen Heward, Minnie M. Park, Catherine Fisher, Margaret Ethel Burgess.

*Leicester County.*—Elizabeth E. Patrick, Frank Hinckley Watson, Frederick G. Hardy, William F. Manning, John George Jibb.

*London County Council, Banstead.*—Sam Owen, William G. Salter, Alfred J. Fluck, Margaret Mary Dalton, Sarah Ellen Carter, Mary Browne, Agnes A. Anderson, Caroline Hetty Brenton, Marion E. M. Taylor, Jane Barrow, Daisy Maud Barrack, Ida Jeffrey, Gertrude L. Mills, Faith Garner, Nellie Hill, Ethel Mary Wright, Dorothy A. Fox, Annie E. Taylor, Edith F. Dean.

*London County Council, Bexley.*—James Walker, Sydney Jealous, Albert E. Hampton, Ernest Douglas Gough, William T. Adams, Leonard F. Levinson, Edith F. Duce, Annie M. Leslie, Edith Jones, Eva Thornton, Florence Angliss, Lilian Whitehurst, Agnes Thomson, Kathleen Mary Tolman, Beatrice Brawn, Alice Turner, William H. Bishop, Sidney Seaman, Henry William Pepler, Charles P. Harber, Samuel T. Bowden, George W. Banham, Cathrine Edwards, Maria Robbins, Florence E. Saunders.

*London County Council, Cane Hill.*—Elsie Last, Fannie E. Heselton, Louisa R. Potter, Nicholas Watson, Mary Isabella Seales, Sophie Elizabeth Barrett, Alice Maud King.

*London County Council, Claybury.*—Jennie Edwards, Margaret E. Jones, Lily Dora Smith, Adele Josephine Blair, Mary Hughes, Florence R. Jordan, Ethel Rodway, Eliza H. Dungate, Laura L. Reeve, William Holland, Eugene Sheridan, Edward G. Saywell, John Young, Fred Dawson.

*London County Council, Colney Hatch.*—James Cameron McCombie, Charlotte Mary Corfield, Annie Hamberger, Alice E. Blackshaw, Elizabeth H. Goddard, Daisy L. Lowman, Margaret Stephenson, Helen Morgan, Julia Scanlan, Richard Stephen Venes, Florence Mary Civil, Emmy Susannah Cook, Florence E. Parish, Gertrude Hemmings, Ethel Mary Simmons.

*London County Council, Epileptic Colony.*—Hopkin Thomas, Thomas Bailey, Ernest Langley, Clarice A. Spratling.

*London County Council, Hanwell.*—Mary A. Earp, Jenny Lapidge, Sarah Clements, Jessie Stagg, Dorothy R. Beasley, Lily L. T. Burtenshaw, Daisy E. Marks, Ellen Mabel Anscombe, Charles Henry Godden, Edward A. Fuller, Thomas W. Peel, Arthur James Warren, Thomas Bishop.

*London County Council, Horton.*—Sarah A. Downes, Agnes G. Lawrence, Ethel Hookings, Bessie O. Gilbert, Caroline Taylor, Annie Grundy, Louisa Barton, Maude Mary Knight, Ada M. Winter, Ada E. Bramble, Ellen G. Badcock, Frances Cornwall, Alice Harrad, Mary McOustra, Emily L. Stacy, Percival F. Russell, Edward G. Bessant, Alfred E. Lacey, Ernest W. J. Somers, David John Day, Harvey Clarke, Thomas H. M. Blench, George E. Briggs, Henry F. W. Miles, George Buckland, Cyril Absalom, Albert J. Skelly, Arthur L. Jenner, Harold E. Richmond, Denis Callaghan, Elizabeth Jones.

*London County Council, Long Grove.*—Catherine M. Erskine, Mary A. J. Laing, Winifred E. Greenslade, Alice M. Bailey, Edmund J. Tomkins, Albert J. Westgate, William G. Bridgman, Ephraim L. Willsher, George A. Jackson, Arthur J. Cruse, George T. Wylie, Agnes Darke.

*London County Council, Manor.*—Jessie Rosa Watkinson, Eva Johnson, Edith L. Price.

*Middlesex, Wandsworth.*—Robert G. Gover, Walter Scott Robertson, William J. Walker, Robert Warner, George D. Weatherall, William H. Windeatt, Thomas F. Woodgate, Percy M. Frewer, Margaret Burke, Edith M. Germaney, Helen Groome, Henrietta Hanmer, Jessie D. Knott, Margaret M. Maher.

*Monmouth, Abergavenny.*—Sidney Barton, Thomas Jenkins, James Ruck.

*Northampton County.*—Gracie Peters, Jean Anne Evans.

*Norfolk County.*—Rosetta M. Jerney, Rose L. Wann, Lilian Lyon, Amy A. E. Samways, Ethel M. Fiddaman, Charles H. Sparkman, Edith E. Ewan.

*Nottingham County.*—Nancy Bush, Lucy D. Skermer.

*Shropshire County.*—Alexina F. Mellings, Mary A. C. Harrison, Charlotte Evans, *Staffs., Burntwood.*—Elizabeth Davies, Annie Simpson, Moses Roberts, Percy Nutt.

*Suffolk County.*—Henry S. Witham, William Stone, Emerie H. Stearn, Marjorie Gooding.

*Surrey, Netherne.*—Geo. W. Humphreys, Albert E. Mason, Harry Rolph, Gertrude E. Boyles, Beatrice Jury, Florence M. Slade.

*Surrey, Brookwood.*—Faranella G. Smith, Isabel T. Cox.

*East Sussex, Hellingly.*—Rebecca M. Collins, Josephine Dwyer, Lily Prinee, Alice G. Lucas, Annie Dorothy Steer, Ivy B. Chiverton, Elizabeth M. Petett, Mabel P. Williams, Edith M. Coates, Elizabeth Ayling, Arthur W. Cheal, Albert Grover, Annie L. Long, Henrietta E. Robbins, Mabel White, Katherine Morrison, Edith Elphick, James D. Martin.

*West Sussex, Chichester.*—Harriet Arnold, Ethel Jackson, Adeline Spiegelhalter, Ella H. Yelder, Cissie E. Weaver, Elsie R. Cording, Kitty M. Gardner, Thomas S. Jefferies, Arthur R. T. Haylett, Benjamin Wickens.

*Worcestershire, Barnsley Hall.*—Martha Wootten, Ada E. Wassell, Fanny Small, Ellen A. Mathers, Ernest J. Manton, Randolph Stephens, George A. Kings, William G. Price.

*Yorks, Wadsley.*—Louie Bamford, Grace Gillatt, Hilda R. Barfoot, Sidney A. Culverwell, Fred Hartwell, Albert Bisby.

*Yorks, N. R., Clifton.*—Annie Gray, Lillian A. Mills.

*Yorks, Scalebor Park.*—Clara Monkman, Ethel Straker, Beatrice Exley, Caroline Barley, Lillian R. Humphries, Harry Greaves, Robert F. Wright.

*Birmingham City, Winson Green.*—Albert William Mees, Florence Mabel Foxall, Louisa Salt, Nellie Elizabeth Fisher, Selina Annie Pugh.

*Birmingham, Rubery Hill.*—Richard James Amphlett, Edward Ernest Clark, Lillian Maud Knox, Alice Moore, Marion Scott Russell, Dorothy F. E. Willson, Dennis Ankcorn, Victor Reynolds.

*Brighton Borough.*—Maud C. V. K. Martin, Daisy Louisa Masters, Annie Gladys Hoxey, Ada Brooshooft, Gertrude F. Welton, Joseph C. Elstob, John T. W. Weller, Ernest G. Fuller, Madge Hunter.

*Canterbury Borough.*—Albert Edward Chandler.

*Cardiff City.*—Hilda Mortimer, Lillian E. Downes, Laura Williams, Florence T. Beebee, Beatrice Green, Frederick William Jones, John Dolan, Albert Moate, James Hyman, Cyril H. Coleman, David G. Jones.

*Croydon Borough.*—Helen Taylor.

*Derby Borough.*—Lizzie Mills Palmer, Emma Bodle, Emma Rains.

*Hull City.*—Matilda Cochrane.

*Leavesden, Herts.*—William John Dean, Kate Yelverton, Olive H. Osborne, Annie G. Wilson, Katharine E. Lee, Annie Baker.

*Leicester Borough.*—Margaret Kennedy, Hilda G. Mason, Lucy Merrikin Vamplew, Olga Bailey, Edith A. Murphy, Ethel M. Field, Florence Goodwin, Alice Binge.

*City of London.*—Constance Clapham, Mollie Day, Alfred W. Fletcher.

*Middlesbrough.*—Robert Young, Herbert Mowzer, George Millar.

*Nottingham Borough.*—John William Ranson, Fred Bagaley Smith.

*Plymouth Borough.*—Ernest Walke.

*Sunderland Borough.*—Ellen T. Laybourne, Maggie Risebero, Olive M. Hingley, Arthur Galloway, Joseph Bewick Steele, James Young Boyd, Herbert John Fairthorpe, Herbert Freeman, James Spratt, Edith M. Henderson.

*Yorks, East Riding.*—Ella Morrill, Grace Healand, Annie Pluck, William Fletcher, John Wilson.

*York City, Fulford.*—Jessie Turner, Maude Collier, Harry Smith, Arthur Johnson, Laura Firth, Alice M. Benn.

*Bethlem Royal.*—Hugh V. E. Byrne, Dorothy Mary Buffett, Ellen Clarke.

*Bootham Park.*—Mary Burras, Katie Elizabeth Taylor, James Barnes.

*Brislington House.*—Grace A. Priest, Elijah William Andrews, Stanley Hayward.

*Camberwell House.*—Annie Sophia Higgins, Hill Olivia Juliet Godwin, Grace Hilda Beadle.

*Coton Hill.*—Linda Curzon, Amy Doris Reynolds, Ethel Mary Dolan, Harriet Tyler, Amelia Lawton Cooke, Ada Lydia Raworth.

*Holloway Sanatorium.*—John Mildrumm, John Henry Smith, Frank Raymond, Coomber, Violet N. B. Gresswell, Edith C. Ellerton, Eleanor M. E. Gill, Catherine Forrestall, Ethel May King.

*Redlands, Tonbridge.*—Colin Roots.

*York Retreat*.—George F. Goodwin, John Pedley, Annie Jarvis, Mary E. H. Watson, Gladys M. Rowland, Dora F. Bradley.

*St. Andrew's Hospital*.—Elsie McNicol, Daisy Porter, Catherine L. Catchlove, Mabel Cosford, Ruth Garnett, Florence Woodford, Annie E. S. Henson, Mary Avison, Rosetta Mason, Clara A. M. Goode, Leonard Rickerd, James Arthur Thompson, William H. Thistlethwaite, Henry J. Battrick, George W. Panter, Kathleen M. Martin.

*St. Luke's Hospital*.—Mabel Boston, Cecilia McDonagh, Margaret Wilson, Mabel White, Frank Free.

*Warneford, Oxford*.—Harriett H. Skelton, George A. Collett.

*Bloemfontein, South Africa*.—A. J. Christie, Johannes Marx, Francis Warwick.

*Pretoria, South Africa*.—Nina C. Wills, Gezina S. Martman, Sarah H. Perry.

*Aberdeen Royal*.—Margaret Duncan, Mary Jane Aitken.

*Aberdeen District*.—Mary J. Simpson, Bessie Walker, Jane Mackie.

*Argyle and Bute*.—John A. McDonald, William Walker, Murdoch Macleod, Donald J. Johnston, Rebecca F. McGowan, Mary Fletcher, Jessie M. Greenhorn, Margaret Mackay, Marion Mackenzie, Flora Campbell.

*Banff District*.—Davidina Denoon, Jeannie Peters, Williamina L. Wilson, David Mackie, Helen Duff Stuart.

*Crichton Royal*.—Robert R. Riddell, Robert R. Henderson, Janet Beattie, Mary Daly, Mary F. Carey, Lena Shelbourne, Joseph Dunn, William Nairn, Arthur E. Rae, John Johnstone, John M. Lister, Mary H. Petrie, Elizabeth Reid, Catherine MacRury, Janet McDowell, Margaret S. Riddell, Isabella V. Watt, Maggie J. Player, Marion D. Turner, Jessie W. Lawrie, Christian S. Davidson.

*Bangor Village*.—Barbara McK. Hendry, Janet Tennant, Mary A. J. Luckie, Andrewina F. Sneddon.

*Ayr District*.—Selina McBryde, Isabella Devlin, Jane W. Beaddie, Mary C. Watson, Annie B. McK. Gray, Elizabeth M. Thomson, Annie C. Soutar, Margaret McC. Provan.

*Dundee District*.—Patrick Donnelly, Isabella C. Gibb, Lizzie C. Thomson, Bessie M. Blyth, John Kippen, John Lyall, Elizabeth Rose.

*Edinburgh Royal*.—Jean M. Whitson, Caroline G. Robinson, Janet A. Hardiner, Elizabeth M. Finningham, Agnes Waters, James M. Morrison, Sarah Anderson, Jessie York.

*Craig House*.—Maggie O. Elder, Margaret Thomson, Mary A. Goodsir, Janet Kinghorn, Agnes B. Ritchie, Jennie Stirling, May McD. Smith, Lily Fry, Elizabeth Paton, Maggie Stuart, Emma A. Glass.

*Elgin District*.—Beatrice A. Browne, Jeannie Clarke.

*Fife and Kinross*.—Margaret Thomson, Jessie Nicoll, Jean Morrison, Ina Keith, May A. Elliott, Kate Lobban.

*Glasgow, Woodilee*.—Christina Hay, Helen Lawson, Sophia Smith, Charlotte Fletcher, Leila Ross.

*Glasgow, Gartloch*.—William Watson, Peter J. Clark, Grace Shaw, Elizabeth P. Rae, Mary A. Lamont, Charlotte L. Curren, Christina MacDonald.

*Glasgow, Gartnavel*.—Helen F. M. Duncan, Catherine McLean, Annie Connor, Jessie P. Chrystall, Agnes F. McKay, James Cunningham, John Bell, Margaret Campbell, Mattie J. W. Murdoch.

*Haddington District*.—Isabella M. Chisholm.

*Hawkhead, Paisley*.—Dugald McCorquodale, Norman MacDonald, James Doherty, George Forrest, Stephen Easson, Margaret McLennan, Catherine Coll, Margaret Walker.

*Inverness District*.—Margaret Mutch, Jessie McG. Campbell, Mary J. Malcolm, Elizabeth B. Bothwell, Isabella Fletcher, Mary Munro, Annie M. Craib, Jessie M. Mackenzie.

*Lanark District*.—James H. McColl, Sophia Gibson, Annie McColl.

*Midlothian, Peebles*.—Mary Burns Rankins, Emily Alexander, Christina M. Thomson, Ethel N. Garland.

*Montrose Royal*.—Annie Urquhart, Barbara L. Urquhart, Bella Pert, Catherine Jack, Mary Helen M. Coull, Maggie Ramsay, Mary H. Mearns.

*Paisley District*.—Jeannie F. Emslie.

*James Murray, Perth*.—Annabella W. McIntosh, Elsie Simpson, Janet N.

Mitchell, Eliza M. Chalmers, James Edward, George McHardy, Kate Duff, Catherine McN. Wynd.

*Perth District.*—Catherine H. Henderson, Helen Mc. D. Findlay, Kathleen S. Chisholm, James F. Henderson.

*Renfrew District, Dykebar.*—Donald McLean, Murdoch McKay, John Crawford, Isabella Leitch, Minnie McMahon, Sarah May Fletcher.

*Roxburgh, Melrose.*—Robert R. Ross, Agnes M. Macdonald, Helen Whyte, Mary B. Buchanan.

*Stirling, Larbert.*—Mary B. Nangle, Janet D. Main, Evelyn Lepper, Nora Don, William Smith, Alexander Archibald.

*New Saughton Hall.*—John McVey.

*Armagh District.*—Annie Maxwell, Maggie Dunne, Peter Rush, Mary C. Mallon.

*Ballinasloe.*—Maria Fitzpatrick, Mary Murphy, Katie Morgan, Annie Minton.

*Ennisclorthy.*—Aiden Leary, William Delany.

*Londonderry.*—Alexander McCarter, Andrew Baird, Bernard Logue.

*Mullingar.*—Agnes Murtagh, James Lyster, Bridget Mayer, Patrick Smith.

*Richmond District.*—John Gleeson, Thomas Smyth, Nicholas T. Higgins, John J. Sheridan, Bridget Connaughton, Katie Henry, Elizabeth Hall, William Hogan, Sylvester Sally, Mary A. O'Toole, Mary Kenna.

*Portrane.*—Annie E. O'Beirne, Ellie McCormack, Richard Breen.

*Waterford.*—Margaret Hosey, Mary Cudding, Katie Ryan.

*St. Patrick's Hospital.*—Lillie Matthews, Isabella Kennedy, Mary C. Clarke.

*Farnham House, Finglas.*—Katherine Cox, Martha T. Attewell.

*Middlesex, Napsbury.*—Eugene Thomas, Arthur William Sturman, James C. Baker, Alfred E. Bleach, Charles Tiffen, Arthur T. Bandy, Nancy Vickers, Elsie Springett, Ivy G. Trudgett, Olive Turner, Alice E. Rickett, Dorothy N. Bailey, Annie C. Shorthall.

*Wonford House, Exeter.*—Rosalie Paton.

*Warwick County.*—Alicia Sloane, Christobel King, Olive Huckfield, Margaret Tiernan, William T. Blow, William James Hill, Evelyn Flaherty, Bridget Clarke.

#### FINAL.

*Brecon and Radnor.*—Charles P. Jones.

*Chester, Upton.*—Sarah E. Griffiths, William Pritchard.

*Cumberland and Westmorland.*—Jessie A. Hargraves.

*Devon County.*—Mark R. Court.

*Essex, Brentwood.*—Ellen Tann, Eva Chaplin, Ellen Thomas, Emily Bolton.

*Essex, Severalls.*—Aris McL. Crawford, Annie Boston, Marion Martin.

*Glamorgan, Bridgend.*—Ceridwen Evans, Sylvia Edna Jory, ANNIE ALMOND,\* Ephraim E. Howard, James Fortune.

*Kent, Chartham.*—David Button, Lilian C. Reeves, Edith A. Bricknell, Dorothy E. Godden.

*Kent, Maidstone.*—Katie Copeland, Eileen Radford.

*Leavesden, King's Langley.*—Mary E. Lee, Violet E. Nightingale, Minnie E. Pote, Lily M. J. Paxton.

*Lancaster County.*—HANNAH BATES,\* Ellen Kiely, Louisa Balderstone, MARGARET MCSHANE,\* Lawrence Burke, Catherine Alderson.

*Leicester County, Narborough.*—Ena Neville, Henry Nicholls.

*Lancashire, Winwick.*—Elizabeth Williams, Catherine P. Duncan, William H. Lee, Louis L. Lee, James Grant.

*London County Council, Long Grove.*—Catherine E. C. Orr, Elsie M. Pyke, Cecilia Painter, Percy James Muscott.

*London County Council, Colney Hatch.*—Hubert F. Davis, Mary A. Mogford, Olive L. Battarbee, Clarice D. C. Broad, Florence B. Tulley.

*London County Council, Banstead.*—William Reed, Nellie Sinnock, Nellie Peasley, Annie French, Bridget Heslin.

*London County Council, Bexley.*—Mary J. Henry, Jessie W. Forsyth, Donald C. Mackay, Edward M. Ford, Robert J. T. Baker.

*London County Council, Claybury.*—Mary Feld, Henrietta V. Gregory, Edith M. Simpkin, Florence M. Blair, Rose E. Norman, Edith G. Goodearl.



- London County Council, Manor.*—Ethel Timms, LILIAN E. CAIN,\* Blanche S. Vining, Annie C. Stoneman, Maud M. Connolly.
- London County Council, Cane Hill.*—Ellen Spillane, Florence M. French, Anne E. Healy, Jessie Andrews.
- London County Council, Epileptic Colony.*—Ethel Prosser, Fredk. T. Westbrook, Millie E. A. Buckett.
- London County Council, Horton.*—Elsie Reeves, Margaret E. Kitchen, Stella E. M. Peer, Adelaide F. Holmes, Mabel H. Robinson.
- London County Council, Hanwell.*—Geo. Edgar Naldrett, Geo. Frederick Thewless, Alice Broad, Daisy E. Mount.
- Middlesex, Napsbury.*—James Payne.
- Middlesex, Wandsworth.*—Wesley G. Howe, Henry Hillier.
- Norfolk County.*—Patience L. Hardiment, Lucy Bassett, Madge Mattocks.
- Northampton County.*—George H. Train.
- Northumberland County.*—Launcelot H. Ashby, George B. Burrill.
- Nottingham County.*—Herbert W. Davies.
- Shropshire County.*—Mary Jane Hamplatt, Charlotte W. Jones, Nellie Griffiths.
- Staffs., Cheddleton.*—Mette Raben, Cornelia V. Petersen, Elsie M. Welsh.
- Suffolk County.*—Harold G. Potter, Mary E. Wibberley.
- Surrey, Netherne.*—Charles J. Colerick, James Mitchell, Cecilia M. Mockett.
- Surrey, Brookwood.*—Lucy A. Rose, Elizabeth Wiggall.
- West Sussex, Chichester.*—MARY D. LAURENCE,\* Winifred E. Heppell, Ruby Shears, Clara G. Gruitt, Nora Ashton.
- East Sussex, Hellingly.*—Lily L. Darby, Gertrude Cutts, Audrey R. Sampson.
- Worcester, Barnsley Hall.*—John P. Delves, Frank B. Hastrop, Frances H. Gill, Annie M. Newnham, Emily L. Perkes, Amy Davies.
- Yorks., N.R., Clifton.*—Teresa Naughton.
- Yorks., E.R., Beverley.*—Margaret McGreevy, George Frederick Wardell.
- Yorks., W. R., Scalebor Park.*—Jeannie G. Forsyth, HERBERT HEWITT.\*
- Birmingham, Rubery Hill.*—May Pote, Frederick G. Williams, Agnes L. McColl.
- Birmingham, Winson Green.*—ELLEN MAUD TURNER,\* Frank G. Smith, Annie Bate, Beatrice G. G. Cartwright.
- Cardiff City.*—Florence E. Pearce, Jeannie Murray, Hannah M. Walker, Ethel A. Davys, Jane McGowan, Walter S. Freeman, Albert J. Cusse, Thomas Redmond.
- Bristol City.*—Barbara Hughes.
- Canterbury Borough.*—Harold R. Hathrill, Susan Jones.
- Croydon Borough.*—Annie Constance Parker.
- Derby Borough.*—Minnie Collishaw, William T. Wright, William T. Taylor.
- Hull City.*—Winifred Butler.
- Newcastle City.*—Albert G. Furness, Watson Dennison, John Parkinson, James John Robinson, Thomas Laidler, William G. Gates, Leonard Merritt, Albert Griffiths, Herbert E. Howell, Walter Haigh.
- Nottingham City.*—Frederick Brown, Ida Gilbert.
- Sunderland Borough.*—William T. Reay, Isabella Galbraith.
- Bethlem Hospital.*—Jessie Hare, Alice Maud Dawson.
- Brislington House.*—John Escott Payne, Jessie Wilcox, CORDELIA WIDDICOMBE.\*
- Camberwell House.*—Annie M. Marsden, Helen M. Dixon, Bessie Gray Thorowgood, ETHEL NORMAN.\*
- Redlands, Tonbridge.*—Evelyn May Lloyd.
- St. Luke's.*—Editha A. Nightingale.
- Virginia Water.*—Margery H. Tomkins, Lucy E. Knowles, Mary C. Smith, Catherine H. Scott, Harold Goodwin.
- Warneford, Oxford.*—Dora E. Boness, Lucy E. Faulkner, Florence E. Butlin.
- Retreat, York.*—Dorothy Voysey, Emily Bailey, Jessamine B. Oakhill, Catherine H. Macdonald, Jeannie McWhirter, Elsie Richardson, Elsie R. Sharpe, Gertrude R. Williams.
- Aberdeen Royal.*—Margaret Taylor.
- Aberdeen District.*—Elizabeth Ann Grant, Susan P. Allan, Isabella N. Robertson, SOPHIA L. HATTON,\* Annie Stephen.
- Argyle and Bute.*—David P. W. Walker, Donald MacAulay, Isabella Smith, Jessie G. Macindoe, Neil MacLellan.

- Ayr District.*—Georgina Flett, Annie D. Allan, Neil McLean, George McPherson.  
*Banff.*—Walter Joiner, Charles George, Isabella McKissack, Charles Esson.  
*Bangour Village.*—Mary Crawford, Emily M. Woodman, Jean McMillan, David C. Murray.  
*Crichton Royal.*—JAMES W. GEDDES,\* Adam H. Thorburn, John G. Richardson, Samuel D. W. Johnstone, Minnie Scott, Violet Y. Lambie, MARY J. CHESNEY.\*  
*Dundee District.*—Margaret Clark, Marie Powrie, James S. Rankin.  
*Edinburgh, Craig House.*—Annie S. Davie, Margaret Grigor.  
*Edinburgh Royal.*—Margaret I. Clarke, William D. Mackay, Jessie B. Kirkland.  
*Elgin District.*—Catherine G. Reid, Isabella A. G. McKay.  
*Fife and Kinross.*—George O. Milne, Robert Dewar, Bella McHardie.  
*Gartloch.*—Flora MacDonald, Margaret R. Reid.  
*Glasgow, Woodilee.*—Mary A. McNabola, Emily G. Gilpin, Helen Ross, Lizzie A. Findlay, Mabel G. Ferguson, Mary Shaw, Elizabeth Stevenson, Archibald Brown, Peter Mitchell, Jessie Hanlon.  
*Glasgow Royal.*—Harriet McLean, Jean Townsend Andrew, Annie C. McClean, Catherine M. Goold, Catherine R. Leitch, Duncan Turner.  
*Inverness District.*—Catherine Fraser, Catherine E. Douglas, Margaret McLeod, Isabella Mackenzie, Jessie A. Skinner, Jessie Stevenson, Christina Cameron.  
*J. Murray, Perth.*—Mary Burke, Isabella Thirde, Kate A. Cameron.  
*Midlothian and Peebles.*—LILIAN FRANCES TRAIN.\*  
*Montrose Royal.*—Bella G. Walker, Margaret J. Stables, Flora C. Robbie.  
*Hawkhead, Paisley.*—James Caldwell, Donald McPhee, Elizabeth Fleming, Jennie McLellan, Kate McLellan, Euphemia Morris.  
*Paisley, Riccarton.*—Mabel Falconer, Mary Cattnach, Mary Beaton.  
*Perth District.*—Jennie Cameron.  
*Renfrew District.*—Neil McDonald, Kate H. Mackenzie.  
*Roxburgh, Melrose.*—George Brown, John Alexander West.  
*Stirling, Labert.*—May E. Rayment, Michael O'Dea.  
*Ennisclorthy.*—Mary Whelan, Elizabeth Curry.  
*Farnham House.*—Patrick P. Mooney.  
*Mullingar.*—Katie Carberry, Jane Maguire.  
*Richmond District.*—Nicholas Kelly, Aloysius Doyle, Patrick Scally.  
*Portrane.*—Mary Farrell, Alfred Pownall, Molly Clifford, Sarah Dowling, Elizabeth Short, Norah Hayden, Andrew McEvoy.  
*Valkenburg, South Africa.*—Walter James Bush.  
*Pretoria, South Africa.*—F. W. Hartnell, M. Hall, M. de Ruiter.  
*West Ham Borough.*—Sidney James Townshend, Ellen Louise Wiseman, William Williams, Harriet Ellen Davey, Nellie Kemp, Joseph Henry Jennings, Alfred James Honeyman, Daniel O'Sullivan, Frederick John Partner, George Cherry.  
*Warwick County.*—Robert Charles Brown.

\* Passed with distinction.

#### OBITUARY.

DR. BONNER HARRIS MUMBY.

Dr. Mumby, the Medical Superintendent of the Milton Asylum, Portsmouth, died suddenly on April 29th from heart failure after a long period of impaired health associated with attacks of angina. Although he was well aware of the impending issue, he declined to relinquish any of his work, and bore his painful malady with a cheery fortitude, which was the admiration of all who knew him. The news of his death was received with profound regret in Portsmouth, where he will long be held in remembrance on account of both personal attributes and public services. He was a borough official in two important medical departments—those of public health and mental disease. He was a keen volunteer and held the rank of Lt.-Col. R.A.M.C. (T.F.) 5th Southern General Hospital. He was an active member of the British Medical Association, and their Journal published an appreciative memoir on May 9th; he was a member of the Council of that Association, and was Secretary to the Public Health Section at the Annual Meeting at Bristol in 1894, and to the Section of Psychology at the Annual Meeting held at Ports-

mouth in 1889. He was a well-known Freemason, being a member of the Phoenix Lodge and the Chapter of Friendship No. 257, Past Master of the United Brothers Lodge No. 1069 and P.S.G.D. of the Hants Provincial Grand Lodge.

Dr. Mumby qualified from University College in 1879 as M.R.C.S.Eng. and L.S.A.Lond., and as M.D.Aberdeen in 1881. After a period of general practice he took the D.P.H. Cambridge in 1885, and was then appointed Medical Officer of Health for Portsmouth. He held that post for twelve years with so much credit and success that he became the recipient of a presentation from the Town Council "In recognition of their admiration for his services." In 1896 he was chosen to succeed Dr. Bland as Medical Superintendent of the Borough Asylum. Although without experience of this branch of medical work, he possessed qualities, personal and professional, which well fitted him for the post. Dr. Mumby was a just and upright, kind-hearted and sympathetic man, who enlisted the confidence, respect, and affection of all those with whom he had to deal. He had a faculty for discipline and organisation, an untiring capacity for work, and, with his sound and wide knowledge of medicine, he was quick to utilize any fresh scientific means of diagnosis and treatment. His appointment led to a progressive marked improvement in the institution under his care. He carried out quietly and effectively improvements in the appointments of the wards, in the condition of the patients and in the means for their care and treatment, and in the standard, smartness, and efficiency of the staff. Latterly, he was actively concerned in the planning of new blocks and detached villas for private and other patients which have been comparatively recently completed, equipped, and occupied, and constitute a valuable addition to the means of treatment of the mentally afflicted in the district. Dr. Mumby became a member of the Medico-Psychological Association in 1897, took very great interest in the teaching and training of the nursing staff, and freely devoted time and patience, year after year, in conducting examinations in first aid, general and mental nursing, to help neighbouring superintendents.

A number of official bodies were represented at the large gathering on May 9th in the Asylum Chapel, where the first part of the funeral service was held, after which the remains were conveyed to Woking for cremation. The Chaplain, in his moving address, paid a warm tribute to Dr. Mumby's performance of his duty as Medical Superintendent, and admirably summarised his work in these simple words: "He was a perfect master, a good servant, and a true friend."

#### JAMES NEIL, M.D.Aberd.

We regret to record the death of James Neil, M.D., Medical Superintendent of the Warneford Asylum, Oxford, and a member of the Association since 1880, which took place in a London nursing home on June 13th. Dr. Neil had undergone an operation for duodenal ulcer, which had been completely successful, but he succumbed to an intercurrent affection.

James Neil was the son of the Rev. Robert Neil of Glengairm, where he was born in 1848. He was educated at Glengairm, and entered Aberdeen University in 1873. He there took the degree of Bachelor of Medicine in 1877, and four years later that of Doctor of Medicine. In 1877, he became assistant physician to the Royal Asylum, Aberdeen, and in 1878, assistant medical officer to the Cheshire County Asylum at Macclesfield, a post which he held for five years. Subsequently he was assistant medical officer to the Borough Asylum at Portsmouth. In 1887 he went to the Warneford Mental Hospital as assistant medical officer, and became superintendent in 1897.

During his administration of this institution, many improvements have been carried through, the last of which was a new block of buildings, now almost completed, to be used for the provision of better accommodation for the nursing staff.

Dr. Neil was the author of several valuable contributions to the literature of mental diseases. In dealing with cases of mental disease, he combined in a peculiarly fortunate way a keen, far-sighted judgment, a large-minded charity, and a just appreciation of the necessity for business methods in administration. He was thus admirably suited to the post he held, and he won in the fullest degree the respect of the governors of the Warneford Hospital, the staff, and the patients under his charge.

He was generally the consultant of the district on difficult cases of incipient mental diseases, and at such times, his counsel was always helpful.

He preserved a keen interest in two recreations—firstly in Scottish history, and secondly in fly-fishing. He was the author of a biography, *Ian Roy of Skellater*, a Scottish soldier of fortune, and he never visited Scotland without enlarging his knowledge of bygone heroes of his country. One of his chief delights was in graveyard inscriptions.

In those who had the benefit of his acquaintance, he inspired a feeling of respect and affection which will long remain. Though long resident in England, he preserved, both in manner and in mind, the distinctive attributes of the Scot, a fact which served to endear him to both his Scottish and English friends. As a member of a small debating club, consisting of medical men, to which Dr. Neil belonged, the writer preserves a lively recollection of his many speeches; no matter what the subject, Dr. Neil always spoke with a fulness of knowledge and a kindly humour.

He leaves a widow, with whom the greatest sympathy is felt in her loss.

Dr. C. Williams, Acting Medical Superintendent of the Warneford Hospital, writes: "He was an exceptionally good as well as clever man, and as an administrator, business man, and master of method I never met his equal. By his unceasing energy, and untiring devotion to its interests he brought the institution over which he presided to the highest pitch of perfection in every department, and his loss is a most serious one, and, on account of his constant thought for the comfort and happiness of those around him, is deplored by all connected with it. By no one, however, is his death more deeply deplored than the writer of these lines, who was associated with him for many hours daily for the last twelve months of his working life, and who not only learnt much from him, but also to love him for his genial, kindly nature, and especially for his numerous acts of consideration and kindness to him personally."

Dr. Chas. A. Mercier writes: "Permit me to lay upon the grave of my friend Dr. Neil a wreath of respect and affection. He belonged to a nation among whom I am privileged to count many intimate friends, and he had a full measure of the quality—humour, which we southrons pretend they do not possess, besides others that we cannot pretend to deny to them—thoroughness, sound sense, business ability, and professional skill. I have sent many patients to his care, have often visited them at the Warneford, and can speak from personal knowledge of his unwearied kindness to them, often reciprocated by suspicion and abuse, and of the constant solicitude with which he worked and hoped, even in very unpromising cases. His crowning merit was that he never attempted to divert the purpose of the founder of the Warneford, to afford treatment and care on the most moderate terms—in a large proportion of his cases on charitable terms—to patients of the educated classes. He never angled for patients who could pay high fees, nor did he attempt to substitute an impressive but uncomfortable magnificence for the solid homeliness and comfort of the Warneford. When we think of the number of patients that came under his care, of the atmosphere of tranquility and goodwill that he maintained around him, and of the help that so many found in reliance on his strong character and sound judgment, we can form some estimate of the good that can be done in a quiet and unobtrusive life. He found his appropriate field of activity; he laboured in it with unremitting diligence; he won the respect and regard of all around him; his life, if it was unambitious, was useful, fruitful, and happy. Who could wish more to be said of himself?"—(Abstracts from the *British Medical Journal*, June 27th and July 4th.)

#### APPOINTMENTS.

Dudley, Francis, L.R.C.P., L.R.C.S., L.M.Irel., Medical Superintendent at the Cornwall County Asylum, Bodmin.

Neill, A. W., M.D., Ch.B.Edin., Physician-Superintendent of Warneford Asylum, Oxford.

Pirrie, R. Reid, M.D., Visiting Medical Officer to the Northern Counties Joint Poor-Law Colony for the Feeble-Minded and Epileptics, Prudoe Hall, Northumberland.

Potts, W. A., M.A., M.D., Medical Officer to the Birmingham Committee for the Care of the Mentally Defective.

Thomas, William Rees, M.D.Lond., M.R.C.P.Lond., Medical Superintendent of the State Institution for Mental Defectives at Moss Side, Liverpool.

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